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## THE PATHOLOGY AND THERAPY OF CANCER.—WITH SPECIAL REFERENCE TO CANCER OF THE STOMACH.*

BY AUGUSTUS C. BERNAYS, A.M., M.D., M.R.S.C. ENG., ST. LOUIS, MO.

Late Professor of Anatomy and Clinical Surgery in the Marion Sims College of Medicine.

Mr. President and Gentlemen: You will allow me to thank you for the high honor which you have conferred upon me on this occasion. While your selection has done me great honor, the choice of subjects which would be of interest to the members of this representative body of professional men is one which has caused me some anxiety. After ripe deliberation I have come to the conclusion that this is an opportunity for presenting the modern standpoint of a certain department of medical science. I have been engaged in practical surgical work for nearly twenty-five years as teacher and operator, and shall base my critical remarks on the advances that have been made in the treatment of cancer largely upon my own observations. There has been great activity in the study of malignant neoplasms, and the last few years have brought about a markt change in the therapy of these diseases. We are now doing operations of much magnitude and extent and are invading regions not thought of formerly. In fact, these operations in cancer cases are of daily occurrence, and are done by many surgeons in all parts of the world as a matter of principle and duty. In an address of this kind it can not be my object to present the results of original research so much as to present to you the present views, as they have been evolved by many laborers in the laboratory and in the clinic. The main object must be to arrive at some definite conclusions as to the value of our methods of managing the very common and apparently increasing numbers of cases of cancer that seek our advice and our aid.

I shall use the word cancer in its general sense, including the two forms of malignant neoplasms: carcinoma and sarcoma. I have a right to assume that the histological structure of these growths is well known to all of you as presented in the modern text books, and shall only call your attention to the fact that there are forms of sarcoma which so closely resemble some forms of carcinoma that a differential diagnosis is not as simple as it might appear from the teachings of the text books. Some very important investigations recently made seem to show that even epithelial growths are preceded by changes in the connective tissue which always underlies the epithelial layers of the skin and mucous membranes. I have myself seen two large-celled sarcomata, which had a plain alveolar structure, and puzzled all investigators very much indeed. I wish to go on record as holding that the sharp line which has been drawn between sarcoma and carcinoma can not be maintained, and that, in my opinion, we are far from an understanding of the biological significance of the malignant tumors. The line of research which promises finally to solve the question as to the origin of tumors has been followed in a most laudable, but as yet only tentative, way, by that brilliant English surgeon, Mr. Bland Sutton. His little work on tumors is so instructive and so concisely written that I can not refrain from recommending it to you, and promise you a rare treat from its perusal. While speaking on the literature I can say that the work on tumors by my friend, Nicholas Senn, of Chicago, is the only work on the subject written by an American surgeon which deserves mention. It is a truly great book, and stands next in importance to Senn's "Principles of Surgery" among the works of that admirable and indefatigable surgeon.

I have just stated that a sharp line can not be drawn between sarcoma and carcinoma, and I must now tell you that a line can not be drawn which will everywhere separate malignant from benign tumors. It is a fact that the microscope alone can not be relied upon to make a differential diagnosis between sarcoma and some forms of granulomata. Sarcoma can not always be distinguisht from lymphoma, nor from gumma, and not even from some tubercular tumors, by any known histological methods. The absence of tubercle bacilli in a tumor does not prove that tubercle bacilli are not the producers of the toxin which may have caused the proliferation of cells in question. Even when to the history and the microscopical examination of sections of a tumor is added a full clinical examination by means of all our modern methods and by means of all our instruments of precision a reliable diagnosis is sometimes impossible. Fortunately for us and for our patients, these cases are extremely rare, but I felt constrained to bring out in this address the existing defect, because we are strongest when we best appreciate our weaknesses.

Along the line of bacteriological research all attempts to solve the question as to the etiology of tumors have not advanced our knowledge much. The numerous alleged discoveries recently publisht still await confirmation; and while no doubt some valuable facts have been discovered, their authors have failed to prove that the various parasites (some resembling ameba, others belonging to the coccidia and still others closely resembling ordinary fungi of decomposition and saprophytes) are really etiological or causative in the development of cancer. These workers have, however, succeeded in proving to us that under the head of what we call cancers (malignant neoplasms) some widely different things are included. When we think of a malignant papilloma or wart; of a small black sarcoma of the choroid, beautifully visible in the background of the eye; of a soft, almost bloodless, white or gray sarcoma of the fascia lata; of a hard scirrhous tumor of the breast, or, again, of a pulsating blue vascular sarcoma of the orbit, we must all believe that under the head of "cancer" are gathered a great many things which probably are etiologically widely different, and we must all know that our notion of malignancy is a most elastic one. We know that some of these malignant growths are very slow in doing their deadly work, while others kill almost like acute infections caused by virulent poisons or toxins.

While I am convinced from my own observations and experiments that some forms of cancer are purely of extraneous or parasitic origin, I am certain that the great majority of tumors, benign as well as malignant, are developmental in their origin. It will ultimately be shown that the large majority are referable to some ancestral, inherited defect: the vast majority of tumors will be found to be traceable to a rudiment of an organ which, ages ago, played a more or less important part in the physiology of our progenitors. Drawing the logical conclusion from the facts that have been proven about the descent of man from forms of life which in a long unbroken line have been developt on this planet since it cooled off to such a degree as to permit of the existence of life as we know it, we can truly say that we have almost infinite atavistic possibilities. Just as we now positively know that a congenital fistula of the neck is a remnant of a branchial cleft, of a gill, as it were, so will we some time in the future know how to explain the thousands of deformities and neoplasms, malignant as well as benign. The solution of the question as to the origin of tumors will come when the ontogeny and the phylogeny of the human animal will have been workt out to a high degree by morphological, embryological and biological researches. Much of this work I feel will be done on this side of the Atlantic by American students, in magnificent universities, richly equipt with all modern scientific apparatus in the finest laboratories on earth, endowed by the states and independent of the good will of the wealthy.

Before leaving the subject of the pathology and etiology of tumors I must refer to the Cohnheim hypothesis, which attributes the origin of tumors to a matrix of embryonal cells, which lie dormant in the form of cell-lumps or misplaced islands of cells in the tissues. In order for them to develop a suspension or diminution of physiological resistance in the tissues (whatever that may mean) must take place in the vicinity of the hypothetical matrix. In the absence of this "matrix of embryonal cells," the possibility of a tumor is absolutely precluded. I suppose the diminution of physiological resistance would be furnisht by traumatisms, irritations, inflammations, adverse conditions of life, such as climate, poor environment, hereditary encumbrances, old age, etc.

If the existence of a matrix of misplaced embryonal cells is ever supported by scientific proof, it will be found in the form of "rests," "vestiges" or rudimentary organs. These have great significance when viewed from the developmental standpoint. Here, as elsewhere in the social and natural sciences, evolution

*An address delivered before the Oregon State Medical Society at its annual meeting at Portland, June, 1899.

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will be the torchlight that will lead us out of darkness and ignorance into light and knowledge.

Let us now turn to the practical side of our subject and see what we can do in the way of treatment of malignant tumors. In the middle ages, when it was believed that an omniscient and watchful Deity distributed cancers among sinners as in His wisdom He saw fit to do, prayers were the logical remedy to be employed, and we have records of cures by this means! We also have certificates of cures of cancer by the more modern Christian Science, and the pamphlets sent out by the promoters of health resorts and of many natural springs contain plain statements of cases of cancer which were cured by the air and the waters of these springs. Several times in my life, as a surgeon, patients have come to my office bearing scars upon their bodies which they claimed were the scars of former cancers that had been cured by the waters of some springs or by the pastes of some quack. In every single instance a careful investigation proved to me that the scars were those of syphilis or some more benign ulcer that had healed up rather in spite of, than by virture of, the treatment they had undergone. The ignorant laity as well as designing fakirs are only too prone to call any chronic ulcer which does not yield to ordinary treatment a "cancer." They do not know that the diagnosis of cancer is often very difficult and sometimes uncertain after all has been done that science offers. I have never seen a spontaneous cure of a cancer nor have I ever seen one cured by medication of any kind whatsoever. The recently-introduced methods of inoculation with erysipelas and other toxins as well as the serum-therapy of cancer have now been amply tried and found wanting. I myself tried these methods on some cases which, in my opinion, were inoperable, but could never record a permanent improvement, and, of course, a cure was out of the question. Where we find reports of favorable results of the inoculation treatment by good surgeons we will usually find a statement that the pathologist found the tumor to be a spindle-cell or a small, round-cell sarcoma. As above stated, the microscopic examination is not capable of positively recognizing or differentiating these forms of sarcoma from granulomata or even from benign tumors which have their origin in the lymphatic or connective tissues. The pathologist was in error, and it is probable where a tumor recurs after an operation, in or near the scar, that it is a granuloma, a keloid or a benign fibrous or myxomatous tumor or perhaps simply a thickened cicatricial mass, such as we sometimes find in the subcutaneous tissues after operations. These growths sometimes require months and even years for their final absorption.

I do not wish to disparage the serum therapy or the inoculation therapy, and not even the injection of pyoktanin or alcohol or any other chemical into the substance of inoperable cancers. These methods, or new ones more or less like them, should all be tried before they are condemned. They are deserving of elaborate trial, as we can not predict their effects a priori. And in inoperable cases the attending surgeon must, as least for physical effect, if for no other, do something to encourage the unfortunate patient in order to keep him from despondency or suicide. I must insist, however, that in all operable cases the surgeon has no right to temporize or put off the operation for a period of more than four to six weeks, and even that short time may injure the chances of a successful operative cure.

Many of you will now ask how we can draw the line between operable and inoperable cases. This, I will answer, is a purely relative matter: what is inoperable for Dr. A. is operable in the opinion of Dr. B.; Dr. C. will perhaps consent to do the operation at once; while Dr. D. will even urge it and hold out good prospects of a successful operation, and, tho a cure can never be promist, he will encourage the patient and inspire hope to such a degree that he will demand to be given the only chance of a cure which we have to offer.

The question as to the curability of cancer is now finally and completely settled. Cancer, being a local disease in the beginning and spreading in the well-known way through the tissues by way of the lymphatics and the blood vessels, must be curable, when it is possible to remove all the offshoots from the primary nodule. Clinical evidence and the observations of all surgeons who have been in the work for over fifteen years, bear out this truth. Formerly when cancer was regarded very generally as a constitutional affection, the operations were done with a view to merely prolong the patient's life for a short time, and a cure by operation alone was lookt upon as hopeless. Thus the operator did his work in a half-hearted way, and feeling that it could not achieve a complete cure, he did not feel justified in doing the extensive and formidable operations which we do nowadays. In the operation for the removal of the cancerous breast as it has been developt, and as I do it in every instance, the wound is larger in area than the wound made for the exarticulation of the lower extremity at the hip. Some of our most careful and conscientious surgeons require as much as three or four or even five hours for the complete operation of a cancerous breast. In my opinion, the surgeon must be prepared to do a complete operation no matter how long it may take to do so, because upon the perfection and detail of the extirpation of all the diseased tissues depends the result. In one case I removed the breast, all the pectoralis major muscle, all of the pectoralis minor, a good part of the fascia of the external intercostal muscles, all of the contents of the axilla except the nerves and vessels and the clavicle, together with a large bunch of supraclavicular glands and soft parts. The lady has had no return. The operation was done over six and a half years ago. In cancer of the breast I have seen slightly more than half of the patients free from return three years after operation, in something more than two hundred and fifty cases. Of the last one hundred cases done more than three years ago, I have evidence of only twenty-one recurrences. I may as well say here that a recurrence must be treated in the same manner as the primary tumor, by immediate and radical extirpation, and should there be a second return, this must be attackt in the same way until the case is cured or becomes plainly inoperable by the involvement of inaccessible parts. There again I am reminded that what to one surgeon may appear inaccessible to another may be perfectly within reach of the knife and scissors. Only he who has seen good results follow extensive and complete extirpation of whole regions of the body, large parts of the intestinal tract, etc., will have the inclination to do this line of work. Each surgeon soon learns the limitations of his skill, if he is convinced of the usefulness of extensive extirpations of cancerous growths. Every once in a while he will have a "facer" when a patient dies of shock following one of his efforts to save a life. Deaths of this kind remind us of our limitations in such forcible and persistent manner that we are made to feel the responsibility of greatly endangering human life, even when that life is tainted by a destructive cancer. I remember, at this moment, some sleepless nights spent in going over and over in my restless brain the steps of a fatal operation, trying to find in what detail of the work I might have acted differently, perhaps better; how I might have saved the patient a few drops of the impoverisht blood, had I acted otherwise; how it might have been better if perhaps no morphine had been injected, before the anesthetic was given. These thousand more or less fantastic ideas rack one's brain, keeping away sleep, while the body is tost from side to side until, the problem still unsolved, sleep finally comes to the relief of the exhausted organism. A few nights of this kind will dampen the ardor of even the most enthusiastic operator, and, unless nature has fitted him for the work of having given him strength and such nerves and organs of sense as will enable him to stand the ordeal of hard work in the daytime and a sleepless night, now and then, he will abandon surgery and devote himself to some other line of work in the profession. There seems to be no danger then that surgeons will often go too far in their operations for the extirpation of cancers by the knife. Until recent years, before the influence of antiseptic methods, operations were entirely inadequate because they did not go far enough. But now we have arrived at a stage in surgery, where we actually operate for the cure and not for the amelioration of suffering and prolongation of life to an attempt at a radical cure.

Let us now look at the limitations of the operative work. In examining a case of cancer the first question we must answer is, whether or not there is any chance of curing the disease. The examiner will direct his attention to the lymphatics leading into and away from the diseased area with a view to detect any deposits or indurations in the same. He will also direct his attention to the lymphatic tissues some distance away from the cancerous growth, which may have become infected, tho there be no visible or tangible change in them. Having determined these points you can see that before beginning the operator knows what he will have to do. It will be his duty not only to remove all the plainly visible infected tissues, but also as much more of the surrounding tissues as in his judgment may be the seat of microscopic nodules or cell nests. If the operator deliberately sets out to cure a case of cancer he will make up his mind to remove all of the diseased and suspicious tissues, and as you can readily see the operation will be a much more extensive procedure than was ever formerly undertaken. For example I will mention one of the most important points. In a case of cancer of the breast, if the tumor has grown outwardly, so as to affect the skin, it will be necessary to remove a large

area of it, because cancer is known to spread most rapidly in the subcutaneous lymphatic spaces. In a case of cancer of the tongue, or again of the breast, if the cancer has invaded one or more of the adjoining muscles, it will be necessary to remove all of the affected muscle, from its insertion to its origin, and even the fascia surrounding the muscles must be entirely removed. The cancer-cells are known to travel in the large lymphatics of the muscle and the perimysium with great ease and rapidity; and if there is to be anything like certainty of cure these structures must be carefully and entirely removed. It is a good rule rather to remove more tissue than less, even at the risk of leaving impaired and crippled mobility of parts involved. You will judge from what has been said that an operation performed with a view of curing a patient of a cancer will become a much more serious one than the operation which simply aims at prolonging a patient's life by getting rid of the main trouble.

If a radical operation is judged to be anatomically possible by the operator, the question arises, what is the prognosis, quoad vitam, in other words, what per cent, of chances has the patient to survive? The question as to the functional disturbance must also be taken into account, the surgeon must consult with the patient about the matter, both of them must consider the proposition and must answer the question: Is life worth living when certain functions are impaired or lost? In answering this question we must remember that we are dealing with a disease which is usually rapidly fatal, and if it involves certain localities as, for instance, the throat or the pylorus or the bladder, is often the cause of extreme suffering before it produces death. Some of these cases are also not only offensive to their surroundings, but to themselves by the intolerable odor which they emit.

My object in this paper is to advocate early and radical interference by operative extirpation and to combat the tendency of some surgeons to operate only on quite simple cases. I can not admit that the selection of only simple cases for operation is a proper point of view. No doubt the only way to get good statistics is to avoid mortality after one's operations. This desire to avoid mortality always strikes me as a selfish and unprofessional, yes, even a mercenary aim. What are you going to do with the poor fellow who is not operated on because the surgeon fears the possibility of a fatal issue? Has he not a right to demand of you that you give him his only chance? I can not see that we have a right to refuse an operation if the disease can be removed, unless the outcome would be a hopeless functional result or almost certain death at the operation or soon after it. Knowing that cancer is curable, if totally extirpated, and knowing that it is fatal, if not totally removed, I have arrived at the following method of dealing with patients who seek aid from me when they are afflicted by a cancer:

1. When the disease is clearly curable and the danger is slight, then I feel it my duty to urge the operation and insist on an immediate performance of the same, and represent the prospects of a cure as highly probable.

2. When there is considerable involvement of the lymphatics I do not strongly urge the operation, but tell the patient that the chance of a cure, though small, still exists, and, in fact, feel it a duty to make the attempt at a radical extirpation.

3. When the danger of an operation is very great, but where I still think the removal of all involved tissues can be completed (I mean by that where the operation is anatomically thinkable), I present the grave dangers of an immediate death on the operating table, and though holding out but little hope of a cure and only a probable prolongation of life, I still give enough encouragement to inspire the patient with some expectation of being benefited. As a rule, I find that these patients will decide to have the operation done.

4. Finally in anatomically impossible cases, I do not think it is justifiable to refuse to operate in some fashion if, after knowing the truth as to the hopelessness of the condition, a patient demands that an operation be done. In these cases the psychical effect of even an imperfect partial removal of the offensive cancer is very beneficial, and puts off for months the inevitable morphine-syringe which we are compelled to use during the last weeks.

As the time allotted to me will not permit of taking up different forms of cancer in different regions of the body, I have chosen to present to you the rules that should govern us in only one special region, viz.: the management of cancer of the stomach—one of the most frequent and most surely fatal forms of the disease. In the management of gastric cancer two different objects are to be aimed at and two entirely different operations must be borne in mind in treating a case. If we can reasonably hope for a cure, then we at once contemplate the excision of the diseased tissues, because if there is a chance of a cure we have a right to undertake a dangerous operation.

The operation will be an excision or resection of the pylorus or of a larger part of the stomach, or even of the whole stomach. If a cure is not thinkable, i. e., is, anatomically, impossible, then we must perform an operation which will ameliorate the patient's condition by overcoming the stenosis and by preventing starvation. The operation we will choose for this purpose is one of the forms of gastro-intestinal anastomosis: gastro-jejunostomy and gastro-duodenostomy, the two operations which come into practice. I do not intend to discuss the various technical modifications of these two operations, but will speak of the diagnosis and indication for surgical interference. I regard it as most desirable that from time to time an accounting be rendered to the general practitioner about the results of the treatment of cancer by surgical operations.

I am of the opinion that it is the duty of every physician, at the present time, to call his patient's attention to the possibility of a radical removal of this disease by an operation. Unfortunately the diagnosis of cancer of the stomach is not always easily made in the early stages.

## WE MUST NOT WAIT UNTIL A TUMOR CAN BE FELT.

We must recommend an operation if there are symptoms of chronic stomach trouble in persons above middle age which point to ulcer or stenosis. An essential pointer is given us if we can detect malnutrition and indigestion accompanied by a perverted chemical action. I refer especially to the absence of hydrochloric and the presence of lactic acid in the gastric juice, together with co-existing signs of retention of stomach-contents, which indicate pyloric stenosis. We dare not forget that even when the chemical action of the stomach is normal there may be malignant disease.

In a case in which I made the first total excision of the stomach done in America the diagnosis of cancer had been made by the attending physician, altho a tumor could not be plainly made out. The patient had been carefully treated for several months on the supposition that he had a gastric ulcer. He had a number of hemorrhages of almost pure blood. At the operation I found a most extensive tumor. There was no stenosis, and the pylorus was entirely free from disease. In another case recently operated on the diagnosis of cancer was made by competent physicians without the presence of a tumor, and there was no dilation of the stomach. At the operation I found an enormously large, far-advanced pyloric cancer, with narrow stenosis. The tumor was adherent to the pancreas and extended up towards the hilus of the liver and involved about half of the minor curvature. You see that it will not do to wait until a tumor can be palpated, and I regret that I sometimes in the past did not operate early enough because I could not feel a tumor.

The exploratory incision is free from danger, and by its means we can make an early diagnosis and sometimes render good service, even if we should find a non-malignant trouble. The only case in which harm can be done by the exploratory incision is when we make it upon patients too nearly dead from starvation and cachexia.

Persistent, progressive stomach troubles in persons over 45 years of age are much rarer than is usually accepted by physicians, unless there is a mechanical foundation for them. This foundation will be found in an existing stenosis or ulcer of a cancerous nature in the vast majority of cases. The "sympathetic" stomach troubles due to gall-stones, floating kidney, Bright's disease, or some form of constitutional disease having been excluded, nothing remains for us but the diagnosis of gastric cancer.

The trouble which most commonly is confounded with cancer is simple ulcer. But here, as a rule, we have hyperacidity, hyperchlorhydrosis. But we may console ourselves about this matter because even in benign ulcer operative therapy is often the only correct, the only successful course. In this direction in recent years good work has been done by Leube, of Wuerzburg. In 1897, at the congress of surgeons, he threw much light on the subject by giving his large experience in one thousand cases of gastric ulcer by internal medication. Leube found gastric hemorrhages in 46 per cent of these cases, and still there was only a mortality of 4 per cent. In a series of 556 cases, six died of uncontrollable hemorrhage, six from perforation and peritonitis. In three-fourths of all his cases of benign ulcer Luebe achieved a complete and permanent cure by means of a dietetic and medical treatment lasting four or five weeks; one and one-half per cent remained unimproved, and two and four-tenths per cent died. Leube thinks that the remaining 21 per

cent would have been cured by a repetition or continuation of the treatment.

Leube, who is not a surgeon, recognizes the following indications for surgical treatment:

1. Repeated hemorrhages.
2. Severe pain and frequent vomiting, which persists after medical treatment and dieting.
3. Perforation of an ulcer of the stomach.

We are glad to record the fact that a most competent medical authority recognizes that surgery is indicated even in benign ulcers, and I hope you will agree that surgery must not be appealed to as a last resort. The rank and file of the profession must give up the idea that surgery is a last resort and familiarize themselves with the idea of calling the surgeon early. It is just as easy to prescribe a surgeon for a patient as a dose of morphine.

Billroth said that there must be more surgery in the practice of medicine, and when directly understood this thought is entitled to great weight. I am perfectly willing to be used as a tool by the physician, and I think all normally-constituted surgeons will recognize that the physician's calling is more arduous than that of the surgeon, because really the diagnosis of internal diseases postulates a much more scientific education and training than is essential to the surgical specialist.

### THE MOST IMPORTANT INDICATION FOR SURGICAL INTERFERENCE IS A SUSPICION THAT THE CASE IS ONE OF CANCER.

Even where the suspicion of cancer is not pressing, the exploratory operation is indicated. The smaller the cancerous tumor the more chances we will have of a radical cure by its removal. I should consider it a most urgent indication to open the abdomen if a competent physician suspected cancer in a patient whom he had carefully examined and treated for a month or two. Should we find a simple ulcer after opening the abdomen, no harm will have been done, and the case will have been cleared up and either medical or surgical treatment can be rationally and satisfactorily carried out. WHEN IN DOUBT, OPERATE!

In looking over the statistics of operations in gastric cancer the important fact is found that we can now furnish the proof that patients from whom we have removed parts of the stomach, yes, even the whole stomach, for cancer, are enabled to digest and assimilate food and keep well nourisht.

I will quote the statement made by the great surgeon, Kocher, in summing up his entire experience in the surgical treatment of cancer of the stomach by resection. Up to the summer of 1898 he had done 57 excision of cancers of the stomach. There were then twelve of them living. Four more had lived in a good state of health over three years. One man was drowned while bathing, and in perfect health. One woman died of a cicatricial stenosis, and Prof. Langhaus, who made the autopsy, could find no trace of a return. One other man died after a year's good health, in an insane asylum. One woman died four years after the operation from an unknown cause, but Prof. Kocher thinks it possible that she had cancerous glands somewhere in her abdomen. Besides these four cases there are five permanently cured patients. These are in the enjoyment of perfect health. One of them was operated on in 1888, one woman in 1893, one man and one woman in 1895, and one man in 1896. These patients are in excellent condition, well nourisht and contented.

My own experience, tho very large, does not show results as good as that of Kocher. My work was done in St. Louis, Mo., and in private practice to a large extent, and the cases were not in as good condition as those of Kocher, whose work was mostly done in a public hospital, in Bern, on patients who were under good control. Out of twenty-one resections I have only two deaths following immediately upon the operation. All the others survived the operation, and I may say all of them were benefited to some extent, and one lives to-day from whom I removed a pyloric cancer as large as a child's head seven and one-half years ago. The man is now sixty years of age and works a forty-acre farm. Thirteen died within one year from a return of the cancer and seven lived from one and a half to four years. (Of these two are still in good health.)

From Kocher's statistics it is clear that the time has come in which we may speak of "permanent cures" in cases of cancer of the stomach, the most dreadful of all the forms of cancer that we know of, because if left alone, in many cases, the patient is condemned to actual and hopeless starvation. A decided improvement in the mortality is also noticeable. Kroenlein lost three out of his first four operations, and only lost two out of the last twenty. The same can be said of almost every surgeon who has kept up the good work of trying to cure cancer of the stomach in the face of an early appalling mortality. If the general practitioner will send his cases for early operation we may expect a mortality of less than ten per cent. If, however, the extreme skepticism about the success of operations continues to prevail, and the unfortunate patient seeks surgical relief after cachexia has begun, we will have a high mortality and bad results.

I have made it a rule in recent years not to attempt a resection on weak patients, and limit my operation on such to a relief of the stenosis by a gastro-enterostomy. In patients who are comparatively strong, and in whom there is a localized and moveable tumor, the radical operation is indicated.

Since Schlatter, in Zurich, successfully performed his total excision of the stomach a number of these operations have been done by others, but the results prove that suitable cases for this operation are probably not common.

In conclusion, let me say that if as a result of this address some cancer cases will be driven to seek relief by the only rational means we have to offer, namely, by careful and complete surgical eradication, I shall feel that my effort has been rewarded. Should a few cases be radically cured and twice as many killed by the operation, all will have derived more benefit than if none had been operated on. For those who are killed by the operation are saved from a most horrible, slow death. I am perfectly conscious that in thus strongly advocating operation not only in simple but in advanced cases of cancer I will meet some adverse criticism. I am consoled by the thought that a valuable victory can not be gained without first having a fight.

## THE NEW TREATMENT OF TETANUS.*

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To the surgeon the most appalling of all wound-complications is tetanus; not only does it follow the ordinary wounds of accident, but it complicates his operative work even when the most careful antiseptic precautions have been taken, as in a case reported by Fairbairn Binnie, Professor of Surgery in the Kansas City Medical College (a case of tetanus from infected "carbolic catgut in a hernia operation"—Kansas City Medical Index). To the gynecologist it is also of import, at is may cause a fatal result in work usually regarded as practically without danger; as shown by a case in the practice of C. B. Penrose, Professor of Gynecology in the University of Pennsylvania, in which (Gould's "Year-book of American Medicine and Surgery, 1899) the disease appeared on the eleventh day after perineorrhaphy and trachelorrhaphy, and in spite of the most vigorous approved treatment terminated in death on the seventh day of the disease. To the obstetrician it is of even more importance than to the surgeon and gynecologist, since the woman may become infected through her wounds or uterine surface, and the child by way of the severed cord; in the tropics the disease being of peculiar virulence—Roswell Park stating (Surgery by American Authors, Vol. I., p. 138) that in Jamaica one-fourth of the negro babies succumb to tetanus within eight days after birth, and on some plantations fully three-fourths die from this cause.

What is tetanus? Park defines it as "an acute, infectious disease, at present of infrequent occurrence*, invariably of mi-

*This statement of Park that tetanus is "at present of infrequent occurrence" is doubtless based chiefly upon the vital statistics of our great cities in which this disease was formerly quite prevalent. It is just as abundant now—but the returns to the health authorities do not show this! The reason was made apparent to me in this investigation. Inquiry of the mortuary clerk at the health office of the City of St. Louis disclosed the fact that only two cases of death from traumatic tetanus had been reported in a period of two years; yet I had in my pocket the details of eleven cases of tetanus treated with serum within one year, in St. Louis, with a fatal termination! A moment's reflection showed the reason of this remarkable hiding of the truth: All cities now insist that cases of death from "traumatic tetanus" (as distinguisht from tetanus neonatorum) shall be investigated by the Coroner! So to avoid inquiry, the attending surgeon makes a return of death from laparotomy, operation for tumor, sepsis, etc.

*Read before the Tri-State Medical Society of Illinois, Iowa and Missouri.

crobic origin; characterized by more or less tonic muscle-spasm with clonic exacerbations—which for the most part occurs first in the muscles of the jaw and neck involving progressively, in fatal cases, nearly the entire musculature of the body." When the tetanus bacillus (Kitasato's bacillus, or Nicholaier's) which while essentially anaerobic in its development, abounds in earth of the rich loam variety and in horse-manure (Verneuil lays stress upon the fact that the intestine of herbiverous animals often contain the bacilli of tetanus and malignant edema) has been introduced into the body of most vertebrate animals there develops an exceedingly powerful toxin which speedily produces death except under the most favorable circumstances. The mode of action of this toxin is of great importance from the bearing it has upon the latest method of treatment of the disease. Ehrlich some time ago demonstrated that the tetanus poison combines with the cells of the spinal cord—the clinical symptoms indicating this elective tendency of the toxin; and from the study of the history of those cases which have come under my observation I am satisfied that it spreads through continuity of nerve-substance until the vital centers of the medulla are reacht, when death speedily supervenes. But Roux and Borrel have also shown that the poison enters the circulation as well; so we are compelled to believe that successful antitoxic measures must be directed (a) to checking the progress of the disease in the spinal-cord cells, and (b) to counteracting the poison circulating in the blood.

The first efforts made in the direction of combatting the toxin by precisely the same plan as that already so sucessful in the treatment of diphtheria did not—as elaborated by Tizzoni and Catani—give wholly satisfactory results. So distinctly apparent was this that Park, writing in 1896, while describing their antitoxin treatment of tetanus, declares: "The prognosis is almost invariably bad. No case of acute tetanus under my own observation has ever recovered. Still, occasionally, recovery does ensue. Whether this be due to a peculiarity of the patient or to the medication is perhaps doubtful. If patients live more than five or six days the prognosis is certainly better." Since then numerous cases have been reported as treated with the improved serum, with various results. The serum now used is prepared thus: "The animal used is the horse, which is immunized by injecting at first small, then increasing, doses of active cultures of the tetanus bacillus, sufficient to affect the animal, but insufficient to kill. In this way an increasing degree of immunity is produced, until a point is reacht where the animal seems absolutely insusceptible to the disease, even in its most virulent form. Blood is now drawn from this animal, and its serum separated" and preserved, to be used hypodermatically in appropriate doses.

Tizzoni believes that by the injection of this serum one does not neutralize the active infective principle, but simply immunizes (rather too slowly) the parts of the body not already tetanized, thus limiting the tetanus poison to a small territory—the earlier treatment is instituted the less the infected field. He claims that the usual mortality-rate is 80 per cent. Up to the time of his report (Gould's Year Book for 1898) he had collected 114 cases treated by antitoxin, which gave a mortality-rate of only 46 per cent; but eliminating a large number which appeared only after a long period of incubation as well as those which were of only mild form, he found that 38.7 per cent of the acute, severe cases recovered, as compared with 20 per cent under old lines of treatment. He also calls attention to the important fact that there are certain cases of tetanus of such rapidity of onset and short duration that the antitoxin treatment can not possibly be of benefit, as at least twenty-four hours are required for complete saturation of the system with antitoxin. He, therefore, advises with Bazy, Nocar and others "preventive inoculations of antitoxin in animals and men presenting grimy and dirt-laden wounds, such as are followed by tetanus. This recommendation is especially based upon Roux's statement, amply proved, that the toxin can be readily neutralized at the time of infection, but that a short time afterward it requires doses thousands, and even hundreds of thousands, of times larger to accomplish the same purpose." (Archibald Church, Professor of Neurology in the Chicago Policlinic, in Gould's Year Book, 1898.) As the serum, properly prepared, is absolutely devoid of harm, the wisdom of preventive injection in suspicious wounds is apparent.

As already mentioned, the results from the use of tetanus antitoxin as a curative agent, since the report of the 114 cases collected by Tizzoni, have not been wholly satisfactory. The best report, from the standpoint of the advocates of serum treatment, is that of W. E. Green (British Medical Journal, July 23, 1898), who has been able to collect (by personal investigation) 36 cases of tetanus treated with serum, with 25 recoveries. Were subsequent statistics as favorable as these the proper treatment of this grave disease might be considered settled; but they have not been. While R. F. Weir, Professor of Surgery in the College of Physicians and Surgeons, New York, says (Gould's Year Book of American Medicine and Surgery, 1899) that it cured nine out of eleven cases, and Heddaeus (Munchener Medinische Wochenschrift, March 22, 1898) declares that the treatment has become so well establisht that "tetanus antitoxin should be given in every case, as it is a specific if given soon after the appearance of the tetanic symptoms," the work of others does not bear out the assertion that the serum, as generally administered, is distinctly curative. Of recent cases supporting this statement may be mentioned the following:

Commenting upon unfavorable reports by Wm. G. Porter, S. B. Penrose, T. S. K. Morton and John B. Roberts—all of Philadelphia—C. W. Dulles, of Philadelphia (Transactions Philadelphia Academy of Surgery), remarks that many careful observers believe no cases have been cured by antitoxin which might not have been relieved by other remedies.

In line with these observations of eminent men of the East has been that of some of our own Tri-State practitioners.

F. J. Lutz,* Professor of Surgery in Beaumont Medical College, St. Louis, has treated five cases of tetanus with serum; result: two recoveries and three deaths.

L. C. McElwee,* Professor of Drug Pathogenesy in the Missouri Homeopathic Medical College, St. Louis, has had one fatal case treated with tetanus antitoxin.

Paul R. Baer,* of St. Louis, also lost a patient to whom the serum was given.

Robt. L. Funkhouser,* of St. Louis, had a fatal case at the City Hospital, in which the serum was employed really too late to be of service, on the fourth day of the disease. Death occurred on the sixth day.

F. B. Drescher,* of St. Louis (with H. Tuholske, Professor of Surgery in the Missouri Medical College, as consultant), lost a case in which serum was carefully administered.

J. H. Amerland,* of St. Louis, had a case in which the serum was used very early. A boy of twelve years developt tetanus following an injury with a toy pistol. Slight trismus was noted one morning; twenty-four hours later a general convulsion markt the onset of the disease; during the forenoon of same day tentanus antitoxin in full dose was given, with no effect. Two bottles were givin in all. No effect was noted from it—death occurring.

A. W. Fleming,* Professor of Operative Surgery in Barnes Medical College, St. Louis, had one case treated unsuccessfully with the serum.

John W. Dean,* Assistant Superintendent St. Louis City Hospital, treated a girl of twenty, with traumatic tetanus, with injections of 10 to 20 cc. of serum, three full bottles being given without preventing death.

F. W. Chase, of St. Louis, has had one case of tetanus following vaccination in which the use of serum was without results, death occurring apparently just as soon as if no antitoxin had been injected. (St. Louis Medical Society Transactions.)

Benno Bribach,* of St. Louis, has treated one case of tetanus neonatorum with serum—with the usual result: death.

G. C. Eggers, President of the St. Louis Academy of Medical and Surgical Sciences,* had a case of tetanus developing on the twelfth day after a crush of the elbow joint. I saw the patient within twelve hours with Dr. Eggers, and suggested operative treatment—which was positively rejected by the patient and his friends, who saw nothing serious in the trismus then present. Antitoxin of tetanus was at once begun, but in spite of three full bottles (about 100 cc.) he died—apparently wholly unaffected by the serum.

M. L. Harris,* Professor of Surgery in the Chicago Policlinic, treated a case in August, 1897, thus: A fireman was injured at an explosion of a grain elevator. The entire anterior surface of his body, including face and extremities, was literally blown full of charred wheat. In addition there were hundreds of small wounds caused by dirt, gravel, pieces of tin, tacks, nails and splinters of wood being driven into the skin and muscles. There were so many wounds it was impossible to tell in which the tetanus germs had been deposited and likewise impossible to cleanse them all. He workt several days trying to dig out grains of wheat and other foreign bodies. In about a week the patient began showing symptoms of tetanus. Owing to the doctor's absence for three days, the use of the serum was delayed until his return. He immediately injected him and repeated the

*Personal communication.

injections several times, but without effect. He died within a few days with the most violent spasms. Of course, as Dr. Harris says, this was an unfavorable case on account of the hundreds of points of possible infection and the late use of the serum.

J. L. Morris,* Professor of Pediatrics in the Illinois Medical College, Chicago, writes of one case in the Presbyterian Hospital treated with serum; with a fatal termination.

J. W. Miller,* of Kansas City, Kan., has had one case, traumatic, treated with serum, with a fatal ending.

D. R. Brower,* Professor of Neurology in Rush Medical College, Chicago, reports the case of a boy of fourteen years, traumatic tetanus, treated early with serum. Death occurred on the third day.

Dr. J. B. Herrick,* Adjunct Professor of Medicine in Rush Medical College, reports three fatal cases:

Case I., female, age 26, tetanus following criminal abortion, convulsions and temperature 101-103 degrees, with pulse 120-140, received 50 cc. serum in three doses; death occurred on third day. Prognosis bad from first.

Case II., male, age 25, scalp wound, had trismus and facial paresis when first seen, temperature 100-102 degree. Death occurred two days later in spite of thoro trial of serum.

Case III., boy 17, nail in foot, when first seen had trismus, tense neck and abdomen, soon general convulsions on irritation, temperature 99-101 degrees, pulse 90-100. He had three doses of antitoxin, but died on fourth day.

So much for unfavorable results in our own territory.

It would seem that in obstetric practice the conditions for the use of serum would be ideal, for preliminary symptoms are here unmistakable and comparatively long-continued. According to Rubeska (Archiv fuer Gynaekologie, Vol. LIV., 97) the date of onset is the sixth to the eleventh day, when trouble begins with a trismus and dysphagia instead of tetanic contractions of the muscles of the pelvis, the seat of trauma and infection; which symptoms continue 48 to 72 hours before the appearance of markt tetanus. The mortality is high (89 per cent—Hancock and Hirst, University Medical Magazine, August, 1897) by any treatment. But, unfortunately, anticipatory injections have thus far proven ineffectual except where used as a prophylactic agent at the time of confinement; and even this has not been wholly satisfactory in the one great illustration. For nearly three years the obstetrical clinic of Pawlik, of Prague, has been a source of trouble from the increasing number of the fatal cases of accouchement-tetanus. The tetanus serum has, therefore, been thoroly tested; as a result of which Pawlik has decided that the treatment has absolutely no therapeutic effect, but acts by immunizing the patient. An elaborate article in the Klinische-Therapeutische Wochenschrift (January 8, 1899) gives the following conclusions: "So much has certainly been establisht, that injection of serum simultaneously with the tetanus infection confers immunity upon the individual. We, therefore, consider a subcutaneous injection of serum in the period of incubation or in the early stages of symptoms, not as serotherapy, but as seroimmunization. Intracerebral injections of serum have no therapeutic effect in the strict sense of the term. They act rather as a late immunization. As this immunizing action of tetanus serum is now fully establisht, we have been forced to the conclusion that in order to prevent the appearance of tetanus in cases operated in our clinic, we must inject the serum as a preventive measure at the time of operation or immediately after, altho we may be confident that the operation has been performed with every antiseptic precaution. We have been impelled to this course by the number of cases of tetanus that have occurred in our service, even in the absence of puerperal infection. Consequently now, after disinfection, we keep our operated patients immunized against tetanus by subcutaneous injections of tetanus serum, thus completely satisfying our professional and personal conscience." It seems, however, that even this "immunizing" measure of Pawlik has proven unsatisfactory, since a brief note in Presse Medicale, of January 21, 1899, states: "The obstetric clinics of Prague have just been closed on account of an epidemic of tetanus, the number of cases progressively increasing during the past two years in spite of disinfection and the subcutaneous injections of tetanus serum which have been systematically practist at Professor Pawlik's clinics as a prophylactic measure."

On the other hand, a number of exellent results have been recorded, especially in our home territory, of late: Thus:

J. Friedman, Professor of Diseases of Children in Beaumont Medical College, St. Louis, has had two cases of tetanus neonatorum which were cured by the use of tetanus antitoxin (Journal American Medical Association, October 9, 1897.)

John E. Owens, Professor of Surgery in the Northwestern University Medical School, and J. L. Porter, of Chicago, report two cases cured by this treatment; but after a careful review of the reports for and against the plan conclude that the results are practically the same by either treatment: antitoxin or sedative. (Journal Am. Med. Assn., Nov. 13, 1897.)

John Punton,* Professor of Neurology in the University Medical College, Kansas City, in summer of 1897, treated a negro, girl, age 14, for tetanus from rusty nail wound of foot; convulsions markt and constant, and jaws set, at time of first injection. Prompt recovery followed four large doses.

E. H. Miller,* of Liberty, Mo., has had two successful cases.

J. B. Murphy,* Professor of Surgery in the College of Physicians and Surgeons, Chicago, used the serum in one case of tetanus in Mercy Hospital. The patient made an excellent recovery. The infection was through a fracture of the nasal bones.

D. R. Brower,* Professor of Neurology in Rush Medical College, reports one case, an adult man, treated with serum and large doses of chloral and bromide, with recovery on the eighteenth day of treatment.

A. F. Lemke,* of Chicago, had a patient, male, age 19, who developt tetanus following a nail-puncture of the foot, who, when first seen, had trismus, clonic spasm of trunk muscles, retention of urine, temperature 101 degrees, one general convulsion; he was given, all told, 40 cc., and recovered.

J. W. Foster, of Kansas City, records (Therapeutic Gazette, November 15, 1897) a case successfully treated: Colored girl, 15, nail wound of foot, trismus on eighth day, well-markt tetanus on twelfth day, with temperature of 99, pulse 100. Serum, 10 cc. at 4 p. m.; repeated at 8 p. m.; next day better, 10 cc. at 8 a. m., with morphine later; next day 10 cc. at 4 p. m. and same at 9 p. m.; one dose next day. Gradual convalescence.

Same,* in May, 1898, had a similar case, in which serum was used as soon as nature of disease was discovered; 60 cc. were given in doses of 10 cc. every six to twelve hours; sick two weeks; convalescence uneventful; perfect health since.

Newton McVey,* House Surgeon of the Kansas City General Hospital, treated one case of traumatic tetanus with serum and secured a recovery.

J. D. Griffith,* Professor of Surgery in the Kansas City Medical College, had one case of tetanus at St. Joseph's Hospital, which recovered under serum treatment.

This gives in my private investigation in Iowa, Missouri and Illinois, a total of 38 cases, of which 20 died and eighteen recovered—mortality, 52 per cent.

Taking all the evidence, pro and con, into account, one can not but coincide with the opinion of Keen and DaCosta, of Philadelphia (Gould's Year Book, 1899), who say: "We are inclined to agree with Kanthack (Professor of Pathology in the University of Cambridge) that in acute cases serum-treatment has not improved the prognosis, tho in milder cases it may lessen the mortality. Goodrich, in Annals of Surgery, December, 1897, studied 226 cases of tetanus; 64 per cent of those treated by old methods recovered and 63 per cent of those treated by antitoxin recovered. In cases of short incubation there are more recoveries under antitoxin than under antispasmodics."

Dissatisfied with the results from serum treatment as generally practist, Roux and Borrell (Annales de l'Institut Pasteur, April, 1898) began the study of the more practical application of the serum to the ends desired to be attained. They considered three points: (1) In their experimentation they were in the habit of taking a portion of the brain substance of a guinea pig, which they crusht with some tetanic toxin and centrifugalized the mixture; this separates into two layers: the upper layer an opalescent fluid, the lower the nervous substance. The upper layer is found to contain very little toxin, or none at all, while the nervous substance holds the tetanic poison. From which, they argued, that which takes place in the experiment is exactly what occurs in the organism: the tetanic toxin is taken up by the nerve cells. (2) As Marie has pointed out, "the poison reaches the nervous centers by two routes: a part follows the course of the nerves and is fixt by the cells of the spinal cord; another portion of the poison enters the blood, whence it is extracted by the nerve-cells; thus, the cells of the cerebrum can be affected by the toxin brought to them through the circulation. (3) Furthermore, Roux and Borrel found that when the toxin was injected directly into the brain of guinea pigs, the dose required to cause tetanus was much smaller than when a

*Personal communication.

*Personal communication.

subcutaneous injection was made. "Cerebral tetanus" results from the former, owing to the nearly immediate fixation of the tetanic poison, and the symptoms are excitement, intermittent convulsive attacks, motor disturbances and polyuria.

They, therefore, concluded that "the tetanus antitoxin, when injected into animals, remains in the blood, whereas, a part of the toxin is extracted from the blood and fixt by the nerve cens. The antidote does not, therefore, come in contact with all of the poison; some of the two substances, tho so near each other, fail to meet. The serum is efficacious against the toxin which is still in the blood, but it proves powerless against the poison already in the nervous elements. This is why in man, as well as in animals, the subcutaneous and intravenous injections so often fail." (Quotation from an article in the New York Medical Journal, December 17, 1898, by Geo. C. Rambaud, of New York.)

Arguing, then, that the antitoxin might likewise spread by continuity of nerve-tissue, these experimenters decided that the proper treatment, based upon theory, would be to trephine and inject the serum into the brain substance, as well as to use it hypodermatically. This they proceeded to do—experimentally. "Accordingly they treated with intracerebral injections of antitoxin forty-five tetanized guinea pigs; thirty-five of them recovered. Seventeen others were treated with subcutaneous injections; only two of them survived. Seventeen check guinea pigs were not treated with the serum; all died. Theory and experimentation agreed. Antitoxin introduced into the brain protects the upper part of the cord when the lower portion is already affected by the poison;* but it does not cure the lesions that have already taken place; the contractions existing at the time of intervention persist for some time; and Roux and Borrel state that if the medulla is already poisoned (shown by impaired deglutition, and possibly respiratory disturbances) death can not be prevented.

"After the excellent results obtained in animals, it remained to try the treatment in man. It might be objected that the risks incurred are numerous; but, since it is the only chance the patient has, he should receive the benefit of it.

"However, after some consideration, it can be seen that the risks are really trivial. If the intracerebral injection is made in a neutral area, such as the fore part of the frontal lobes, the results of the trauma are minimized; the injury caused by the fine hypodermic needle is trifling, the quantity of serum injected is comparatively small, and being introduced slowly, no undue compression is caused; hemorrhage from the dura and pia are easily avoided; the button of bone removed being small, healing of bone takes place rapidly, and no subsequent adhesions, leading to irritation, are likely to occur.

"It must be added that, nothwithstanding the intracerebral injection, it is necessary, for obvious reasons, to continue to give antitoxin intravenously or subcutaneously for a few days; the toxin in circulation with the blood, together with that which continues to be secreted at the site of injury, is thereby neutralized and can not affect the nervous centers." (Rambaud.)

The number of cases thus far reported, treated by this method, is small; but important as to results. I am able to gather the following:

1. Chuford and Quenau (Presse Medicale, June 18, 1898): Boy, 18, injured April 8, tetanus April 22, subcutaneous injection April 25; 26, worse—operation and intracerebral injection by Quenau; 27 and 28, improved; 29, 20 cc. subcutaneously; May 1, 20 cc.; 2, 10 cc.; 3, 20 cc.—recovery uneventful thereafter.

2. Roux and Borrel (Gould's Year Book, 1899, p. 736): Acute tetanus, traumatic, boy of 15, trephined over right second frontal convolution and one and one-half cc, freshly-prepared serum injected; numerous subcutaneous injections; sedative treatment; recovery.

3. Bacalogu (Gazette des Hopitaux, June 21, 1898): Man, 38 years, gardener, attackt June 8; June 9, 10 cc. subcutaneously; 10, worse, many spasms, 30 cc. hypodermatically. Under chloroform, convulsions of neck and thorax continuing, hopeless prognosis; trephined, 5 cc. intracerebral injection (3:30 p. m.); died 7 a. m. next day.

4. Du Hamel (Medicine Moderne, August 19, 1898): Acute tetanus, boy 15 years, stableman; shot June 20, first spasm July 2; operation July 3; injection by Borrell, 6 cc. into brain—concentrated solution (reduced one-half in bulk by evaporation); 20 cc. subcutaneously; 10 cc. repeated several times; discharged well twenty-two days after operation.

5. Garnier (Presse Medicale, August 24, 1898): Man, 53, driver, attackt June 1; June 6, 10 cc. serum, intravenous; 8, 20 cc., intravenous; 9, worse—20 cc. subcutaneous operation—intracerebral injection by Borrel, 6 cc., concentrated serum; 10, condition bad, 60 cc. injected hypodermatically during day; 11, better, but markt cerebral symptoms; delirium, illusions, etc.; 12, still better, less serum subcutaneously; discharged well July 1.

6. Robert (Presse Medicale, August 31, 1898): Man, 56 years, glue-maker, wounded July 26, tetanus appeared August 8; 9, general convulsions; operation 7 p. m. (by Sebeleau—injection by Borrel) and intracerebral injection of 7 cc., concentrated serum, spasm of neck and jaw persisting in complete anesthesia, unfavorable prognosis; died August 10, 11 a. m.

7. Ombredame (Presse Medicale, September 3, 1898): Boy, 11 years, injured July 16, first symptoms July 25; 26, 27, 28 and 29, very bad; operation July 30; injection (by Borrel) 6 cc. concentrated serum; subsequent subcutaneous injections; discharged well August 25.

8. Heckel and Reynes, of Marseilles (Presse Medicale, September 7): Man, 18 years, stable-hand, attackt August 15; operation August 17—no improvement—death 41 hours after injection, 81 hours after first symptom.

9. Delmas (Presse Medicale, September 17, 1898): Boy, 14 years, injured August 15; attackt August 21, 22, in bad shape; 23, operation, p. m.—too late—death 13 hours after operation.

10. Hue, of Rouen (Journal des Practiciens, November 17, 1898): Boy, 11 years, attackt six days after injury, operation next day—6 cc. intracerebral injection, concentrated serum, 20 cc. subcutaneously died same day.

11. Case mentioned by Rambaud (N. Y. Med. Jour., December 17, 1898), no particulars obtainable, but recovery noted.

12. Lucas-Championiere (Proceedings Societe de Chirurgie de Paris, November 6, 1898): Woman, attackt after laparotomy; intracerebral injection made within 24 hours; death.

13. Lucas-Championiere (Ibid): Woman, tetanus following abdominal section, intracranial injection within 24 hours; fatal result.

14. Chas. A. Church, of Passiac, N. J. (New York Medical Journal, December 17, 1898): Man, 27 years, injured September 18, slight trismus September 30 (tenth day after amputation, but disappeared under hypericum and ecchinacea; October 4, slight stiffness of jaws; 6, tetanus well markt—25 cc. serum subcutaneously; 7, worse—intracerebral injection 4 cc. (60 minims) common serum; 8, 25 cc. given hypodermically every 8 hours, better; 9, better, serum subcutaneously; 10, two doses serum; 11, ditto; 12, one dose; recovered.

15. N. Robinson, of Brooklyn, N. Y. (New York Med. Journal, December 17, 1898, article of Rambaud): Woman, 43 years, attackt November 15, ten days after laparotomy, 25 cc. serum same day; 6, 50 cc. in median cephalic vein; 7, no improvement, operation at 9 p. m., 6 cc. serum intracerebral, 50 cc. subcutaneously; 8, better, serum subcutaneously; recovery slow; nephritis arose and patient died eleven days after disappearance of tetanus.

16. F. L. Johnson, Corona, N. Y. (New York Medical Journal, December 17, 1898, reported by Geo. C. Rambaud, of New York Pasteur Institute): Man, 67 years, injured November 16, tetanus appeared November 23, worse November 24, operation 9 p. m., usual injections; patient died twelve hours after operation.

17. Lucas-Championniere (Proceedings Societe de Chirurgie de Paris, November 15, 1898): One case, "chronic tetanus," gave a favorable result; but it must be remembered that patients do recover from this form of the disease under other methods of treatment.

18. Reclus (Societe de Chirurgie de Paris, November 15) had one case, with unsatisfactory results.

19. Chaput (Ibid.) reported an unsuccessful operation and injection.

*From the standpoint of the pathologist, it is of interest to note that Metschnikoff (Annales de l'Institut Pasteur, November, 1897) in his studies of the influence of the central nervous system in its relation to the tetanus toxin found that the normal brain tissue of the guinea pig protects against several times the fatal dose of tetanus toxin. A. Marie (Ibid.) triturated the entire brain of a normal guinea pig and added 20 cc. of normal salt solution; then inoculating three rabbits each with one-fourth mg. of tetanus toxin (of which the minimum lethal dose was one-tenth mg.), to the first he gave nothing—to the second he injected 1 cc. of the brain emulsion—to the third 4 cc. of emulsion; the first died of tetanus on the fourth day—the second developt tetanic symptoms slowly, and died on the twentieth day—the fourth showed no symptoms at all. In order to be effective, however, the injection must be made immediately, as experiments have shown if the free toxin be injected, followed some time after with the brain emulsion, no effect is produced. So, therapeutically, the observation has no value.

20. Richelot (Ibid.) had a fatal result in spite of this plan of treatment.

21. Hartmann (Medical Progress, 1899, p. 96) is reported to have had a fatal case.

22. Nelaton (Ibid.) also is said to have had unsatisfactory results.

Here we have a total of twenty-two operations for intracerebral injection of serum, with thirteen deaths and nine recoveries—a death-rate of 59 per cent; certainly better than that obtained by subcutaneous or intravenous injections, in cases of like severity, and so far in advance of results obtainable under even the most approved methods of internal medication as to be without the range of comparison as to superiority.

In conclusion, a few words may well be said in regard to technic.

There are certain prerequisites to success, viz.:

1. Arrangements for securing perfect asepsis for opening the skull.
2. Facilities for concentrating the serum without danger of contamination.
3. Absolutely aseptic syringe and needle.
4. A syringe which works smoothly.
5. A syringe large enough to hold 4 cc. (one dram).
6. A fine needle two inches long for the syringe.
7. An aseptic rubber tube connecting the syringe with the needle.

The last-named item is to prevent trauma to the cerebrum from any possible movement of the patient during the 10 to 15 minutes required for the intracerebral injection. A specially constructed syringe like that advocated by Rambaud (loc. cit.) is scarcely necessary in the hands of a careful operator.

The steps of the operation are as follows: Shave the entire scalp. Scrub thoroly with soap, water and stiff brush, six to ten minutes, under complete anesthesia. Dry scalp and wash with ether. Cover with towel and complete sterilization of hands. Then wash scalp well with alcohol. Rinse with bichloride solution 1 to 2000. Protect field with bichloride towels or gauze.

Turn back horseshoe-flap one and one-half inches in diameter over either second frontal convolution or angular gyrus, avoiding motor region for injection. Trephine with one-fourth inch instrument if possible; if not, then one-half inch. On removing button (which is placed in hot sublimate solution) insert needle through dura into brain about two inches, at right angles to skull. With steady pressure, no intermissions or sudden pressure—which would lacerate brain tissue—slowly inject 3 to 4 cc. (45 to 60 minims) of concentrated serum, using ten to fifteen minutes to empty the syringe. Withdraw syringe, insert button (which has been kept in the hot sublimate solution), suture scalp with continuous cat-gut stitch and cover with sublimate gauze.

Repeat operation upon opposite side.

Envelop entire head in aseptic gauze and cotton, retained with moist starch bandage.

In making the injections great care must be taken as to (a) injuring the cerebral tissues, and (b) pucturing one of the large blood vessels. If sufficient time be taken, the first may be avoided easily, and if the fluid be thrown at least one inch beneath the skull in the second frontal convolutions the second can also be.

The editor of the New York Medical Journal remarks (December 17, 1898) concerning this: "The fact that in but very few of the favorable cases reported was there any physical distubance attributable to the puncture of the brain and the injection of fluid into its substance tends to show that the operation does not perceptibly damage the patient's chances of survival even in the instances in which it does not save him. Nevertheless, it is not one to be resorted to indiscriminately in mild cases of tetanus or without due reflection in the graver ones."

The intracerebral treatment must be followed by intravenous or subcutaneous injection of from 15 to 20 cc. of serum every eight hours; and morphine, chloral, etc., given in sufficient quantities to promote sleep.

Forced attempts at feeding are to be deprecated.

Before concluding this report it seems best that attention should be called to the necessity of great care in making a positive diagnosis. Presse Medicale (December 24, 1898) contains a study of several recent cases in which the diagnosis between two affections was confused and a meningitis treated for tetanus, and vice versa. Pronounced trismus seems to be the only infallible indication of tetanus, altho Maragliano claims to have noted trismus in meningitis and its absence in some cases of tetanus; in one of my fatal cases of tetanus there never was any sign of trismus. Also,muscular contractions may be absent during the first stages of true tetanus, while they may be a markt feature of meningitis. The temperature is usually progressively higher in tetanus (Wuenderlich observed one case in which it attained 45.4 degrees C). Owing to the difficulty of raising the patient to a seated posture in some cases, it may be impossible to apply Kernig's sign.

Great care must also be taken to exclude hysteria. The late A. B. Shaw, Professor of Neurology in Beaumont Hospital Medical College, St. Louis, once showed me a case of apparently well-markt tetanus (so diagnosticated by a number of prominent physicians) which proved to be pure hysteria—tho closely simulating tetanus.

From this study of the subject the following conclusions may be drawn:

1. In wounds of such character that the onset of tetanus is feared, preventive injections of tetanic antitoxin is advisable.
2. When symptoms of acute tetanus arise, hypodermatic injections of 10 cc. or more of serum should be given every six to twelve hours.
3. As early as possible a competent surgeon should be called to trephine, under strictest antiseptic conditions, and inject 6 cc. of concentrated serum into the brain.
4. In tetanus neonatorum appropriate doses should be given subcutaneously, and into the brain substance through the frontanelles.
5. Combined with the serum treatment should be the free use of those sedative agents which have been found of benefit prior to the introduction of serotherapy.

## A CASE OF SENILE HYPERTROPHIED PROSTATE WITH MARKT URINARY OBSTRUCTION; BOTTINI OPERATION; RELIEF. LATER, HERNIOTOMY, SEPSIS AND ERYSIPELAS; DEATH. PATHOLOGICAL SPECIMENS SHOWING EFFECT OF THE BOTTINI OPERATION.

BY BRANSFORD LEWIS, M.D., ST. LOUIS, MO.

Professor of Genito-Urinary Surgery in the Marion Sims Medical College.

Case of Wm. Dathrage, American, aged 65 years, laborer, widower. The patient's father and several uncles on his father's side died of tuberculosis; no history of cancer, rheumatism or syphilis in his family. He claimed never to have suffered venereal infection.

The symptoms of his urinary trouble began about four years ago, at first by gradually increasing frequency in urination, followed by difficulty in emptying the bladder. Through heavy lifting, a right inguinal hernia had been produced several years previously. The train of symptoms usually accompanying prostatic hypertrophy followed, finally compelling him to seek relief at the City Hospital, which he entered January 25, 1899.

At that time his health and strength were markedly depleted; his enfeeblement was plainly evident in his thinness, in his hesitating manner and faltering gait. He was passing urine about thirty-five times in twenty-four hours—as often at night as in the daytime, harrassing him with loss of sleep as well as with much actual suffering. His urine was of a light straw color, low specific gravity (1.015) contained albumen and hyaline casts, indicating definite inadequacy of the kidneys. It was alkaline in reaction, and this, together with the pus and triple phosphate crystals shown under the microscope, made evident the participation of the bladder in the inflammatory process. Catheterization was easy until the prostatic region was reacht; here a metal instrument with an ordinary curve was impeded; one with a long, prostatic curve detected the obstruction, but entered without especial difficulty.

By rectal digital examination the prostate was perceived to be considerably enlarged and of moderate firmness. The right lobe was considered the region most at fault. The respiratory organs were affected; there were hyper-resonance and moist bronchial rales distributed over both lungs. The systolic cardiac sound was roughened, as heard over the apex. A right inguinal hernia was plainly evident and gave much trouble from the dragging pains it caused.

The Bottini operation was done on January 27, 1898. Before undertaking it the patient was directed to pass all of the urine that he could, voluntarily, and privacy was given him in order to avoid the inhibiting effect of on-lookers. With the usual amount of straining he past about three ounces. A few minutes thereafter twenty-eight and one-half ounces of residual urine

were drawn off. The atonied bladder had reacht almost to the umbilicus in its distention.

In the operation, because of the adverse conditions of the patient's health indicated above, it was considered advisable to shorten the time as much as possible, so that only one electro-incision was made, leaving for a future time the making of additional incisions should it become necessary. This one incision was three and a half centimeters long, and was directed posteriorly and to the right—at what might be termed the junction of the right with the so-called third lobe.

Air-inflation of the bladder* was made use of to distend its folds and prevent their injury from the cautery-blade; and the cocaine-anesthesia was satisfactory. No hemorrhage ensued, tho the first irrigation-water used after the operation was tinged with blood.

The next few days were not prolific of any striking effects. Altho the patient on the following day declared he could pass water with somewhat more freedom than before the operation, it was thought that possibly his imagination had something to do with the declaration. However, he did not suffer from any fever, chill or hemorrhage, and no catheterization was attempted.

On the night of February 1 (five days after operation) there was increast difficulty of urination and markt urinary retention, followed by a chill and febrile temperature (102 degrees F). On learning this the next morning I suggested regular catheterization at first twice, then once, daily; and he had no repetition of the trouble.

It was ten days after operation before markt evidences of improvement became apparent. These were then manifested by gradually lessening frequency of urination, greater freedom and ease in urinating and diminisht quantity of residual urine. On February 15 the latter was six ounces; on February 22 it was four ounces; on March 2 two ounces. Thereafter the residual urine varied between two and three ounces (instead of twenty-eight ounces before operation). Instead of thirty-five times in twenty-four hours he urinated only seven or eight times (once in the night).

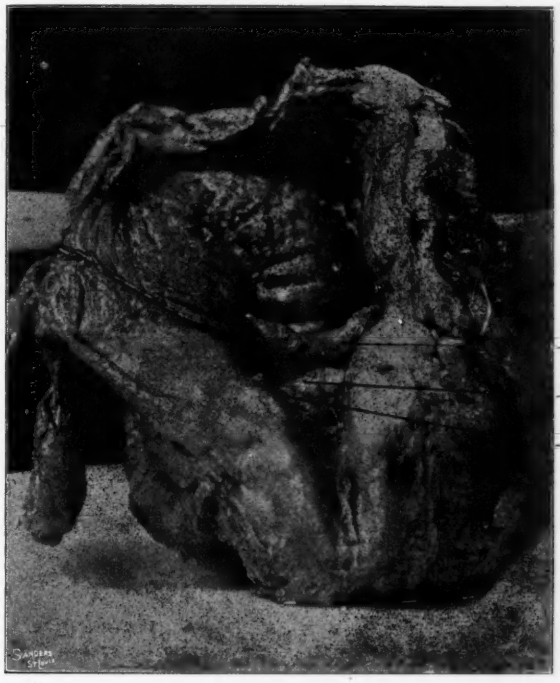
The physical conditions of the urine itself improved: the albumen disappeared altogether and likewise its alkalinity; specific gravity, 1.018; but it did not become entirely clear.

The patient from March 1 to 10 was entirely satisfied with the working of his urinary apparatus, and would grow eloquent in describing the relief he had derived—the full and easy stream, the good night's sleep, etc.; so that I was on the point of showing him before the medical society, but he requested a postponement of that until he could have his hernia operated upon and then show himself completely cured. I was not averse to this arrangement, especially as I did not wish to report his case too soon.

He was, therefore, turned over to another surgical ward, and was operated on March 10 by one of the surgeon-consultants for the radical cure of his hernia. Swelling of right testis and scrotum followed two days later, the wound became infected, active inflammation and gangrene ensued, and at about the same time (March 15) an erysipelatous condition developt on the face. The patient became irrational; there was fever; difficult respiration, with physical signs of edema of the lungs; relaxation of the bowels (fifteen movements in twenty-four hours). The urine at this time was recorded clear, straw color; 1.02 sp. gr.; 1200 cc. in twenty-four hours; albuminous and showing casts. The condition culminated in death on March 25, 1899.

Dr. Willard Bartlett, pathologist to the hospital, kindly made the following post mortem report appertaining to the parts involved: The heart muscle shows diffuse clouding; the left lung numerous circumscribed hepatizations in the upper lobe, a few spherical bronchiectatic cavities, and about one-fourth of the remainder of this lobe is gangrenous; the lower lobe of the same lung is edematous. The kidneys are small and granular, with uneven surfaces; the tunica propria is easily removable. The cut surface shows markt clouding and thinning of the cortex, and deep reddening of the medulla; the apices of the papillae are atrophic and distinctly deprest; the pelves wide, circumscribed dilatations having formed at the expense of the papillae above mentioned. The mucous membrane of both pelves and both dilated ureters is thickened, black, and in many places covered with granulations. The bladder is in a contracted state, containing a small quantity of thick, opaque, light-colored fluid. Its walls are hypertrophic; the color of its membrane black except for light grayish spots, varying in size from a split pea to a nickel; the same consisting of fibrin covering erositions. The prostate shows both lateral lobes much hypertrophied. The wound left by what the clinical history terms "Bottini's operation" is completely healed, leaving an orifice to the right of the median line which will easily admit the entrance of an ordinary lead pencil into the prostatic urethra, and evidently furnisht a free outlet for the urine. Diagnosis, gangrene of the lung, broncho-pneumonia, bronchiectasis, parenchymatous myocarditis, chronic atrophic parenchymatous nephritis, purulent pyelitis and ureteritis, diphtheroid cystitis.

*See my paper, "The Question of Air-Inflation of the Bladder Preliminary to the Bottini Operation," Medical Record, March 25, 1899.




A. Inter-Ureteric Fold.
B. Middle Lobe.
C. Groove made by Electro-Incisor.

In the specimen shown, on closing the dorsal incision made through the prostate and closing at the same time the groove made by the incisor, the source of the former obstruction is readily evident; a prostatic "collar," surrounded the urethro-vesical opening, with a markt accentuation from the so-called middle lobe. They serve to close up the opening much like a puckering-string. But on separating the walls of the prostate by dorsal incision and relaxing the parts to the degree present after the post-operative swelling had subsided, the channel of egress for the urine, running along the right posterior surface and presenting a deep groove, is plainly apparent. The corresponding surface of the opposite side is more elevated, and presents a smooth, unbroken mucous membrane. The surface of the operative groove is roughened to a certain extent, as might be expected of a recently-healed burnt area.

I desire to call attention to the markt demonstration in the specimen of the elevated inter-ureteral fold, that might, without precaution being taken to prevent it, very readily be caught by the cauterizing blade and burned through, endangering the integrity of the bladder or causing peritonitis, etc. This I believe, actually happened in one of Freudenberg's cases. It is for the purpose of preventing this accident that Freudenberg at first advised the use of boric solution to distend the bladder and smooth out such folds, but later (Medical Record, July 1, 1899) adopted air as a better distending medium.*

*See article mentioned.

## RADICAL TREATMENT OF CONGENITAL HERNIA.*

BY JAMES F. ROACH, M.D., ST. LOUIS, MO.,
Chief Surgeon St. Joseph's Sanitarium.

My paper is not designed to deal with the various and numerous forms of hernia, but exclusively with the radical treatment of the congenital form. Therefore, I will at the outset merely point out the differentiation, from an anatomical standpoint, between the congenital and acquired forms. Of course, as we know (and as has been conceded by most of the prominent railway surgeons), in all acquired hernias there is a congenital weakness in the abdominal walls, due to hereditary influence, which manifests itself when any direct or indirect violence occurs; that, however, is not the point I wish to bring up for discussion, but merely an incident worthy of note and pertinent to this article. In considering the anatomy of the inguinal canal from within outwards we have first (in the oblique inguinal form) the peritoneum, then the internal abdominal ring closed by the infundibular fascia, next the inguinal canal with cremaster muscle, then the external abdominal ring closed by the intercolumnar fascia, and last the superficial fascia and skin. Now, in the direct inguinal hernia, we have: peritoneum, abnormal opening closed by the transversalis fascia, then abnormal canal, with conjoined tendon, next the external abdominal ring closed by the intercolumnar fascia, and last the superficial fascia and skin.

Having thus briefly reviewed the anatomy of the inguinal canal, we must now consider the same of the testes or that part of the subject which is of interest to us from a congenital standpoint. The testes are suspended in the scrotum by the spermatic cords; the anterior and lateral surfaces are invested by the tunica vaginalis, which is a pouch or serous membrane derived from the peritoneum during the descent of the testis (in the fetus) from the abdomen into the scrotum. After its descent that portion of the pouch which extends from the internal ring to the lower part of the gland becomes obliterated, the lower portion remaining as a shut sac, reflected on to the internal surface of the scrotum. Now it is important to remember that in the congenital form of hernia this sac does not become obliterated, but remains open; or, in other words, remains as a sac, containing the testes, spermatic cord and the accompanying vessels—also, some of the intestines from time to time.

Recalling these facts, the treatment of this condition is certainly obvious. We are called upon to do that duty which nature has failed to perform; in other words, split the tunica vaginalis from above the gland up to the internal ring, liberating the cord and its accompanying vessels, severing the sac in the center, closing the lower portion above and forming a complete tunic for the epididymis and the testes. The remaining or upper portion of the sac having been slit clear to the internal ring is now tied off very tightly with either silk ligatures or kangaroo tendon as high up as possible, leaving the cord and its vessels upon the outer side of said ligation. Macewen, of Glasgow, preserves that portion of the sac below the ligation, which he returns within the abdomen and retains it in a puckered-up condition by ligatures, the mass acting as a pad placed against the abdominal aspect of the internal ring. This much of Macewen's operation I invariably observe. However, I failed to mention that before ligating the upper portion of the sac at the internal ring I always twist said sac upon itself a number of times, thereby gathering together more of the peritoneum, which, when it becomes scar-tissue, renders the sac more impervious from within.

I now consider the most important step of the operation at hand, namely: the formation of a new canal, in which the abdominal muscles, forming the support of the intestines, must be so firmly anchored together that when a cicatrix is formed it will make a complete barrier against divulging intestine.

I know of no better method for this procedure than that set forth by the illustrious Italian, Bassini: After the usual exposure of the sac, the twisting and ligation of its neck and removal of the sac in front of the ligature, he lifts the spermatic cord and sutures the border of the rectus and the edges of the internal oblique, the transversalis and the transversalis fascia to Poupart's ligament, under the cord. He then places the cord upon this layer of the abdominal wall, and sutures the border of the external oblique to Poupart's ligament under the cord, thus creating a new canal for the cord. I myself, in suturing the internal oblique and transversalis to Poupart's ligament under the cord, suture it so high as to make the cord curve up over the transversalis, forming a U, which makes a more complete barrier within the new canal. The skin and superficial fascia are then closed as usual.

Of course, gentlemen, the last step of this operation can be applied to either direct or indirect acquired hernia, and I believe if this method were fully and conscientiously carried out by a man who thoroly understands the anatomy of the inguinal region the reports would be greatly more favorable than the 50 per cent of the older operators. In fact, the Eastern surgeons are giving us reports of 98 and even 100 per cent complete cure. I have a record of seven cases, all of which, after a period of three years, truly are completely well. We are safe, I believe, in making a criterion of from six months to a year in these cases.

In conclusion, I would like to emphasize the fact that so few men take advantage of the relief that this operation affords; altogether too many go on through life wearing a truss (which is always more or less disagreeable), with the continual possibility of a strangulation staring them in the face. And when I state that statistics prove that one out of every twelve men beyond the eighteenth year are ruptured it is incomprehensible that so few find their way to the operating table for the relief and comfort that might be theirs for life.

*Presented to the Southern Medical Association at Carbondale, Ill.

## REPORT OF FOUR CASES OF SARCOMA TREATED BY INJECTION OF ERYSIPELAS AND PRODIGIOSUS TOXINS.

BY C. M. NICHOLSON, M.D., ST. LOUIS, MO.
Professor of Anatomy in the Beaumont Hospital Medical College.

During the last two years medical literature has contained comparatively little relative to erysipelas and prodigiosus toxins as a theurapeutic measure in sarcoma, owing, in part, to the lack of success in the hands of a well known surgeon who in 1896 reported at a meeting of the American Medical Association the result of the use in nine cases, (three of which were carcinoma), expressing the opinion that the method is valueless. I have, however, had several cases, where the diagnosis was confirmed by skilled pathologists and where operation was impracticable owing to the extent of growth, in which I have used the erysipelas and prodigiosus toxins with seemingly good results. The cases reported were all sarcomatous.

Case 1. Mrs. J. R. C., 47 years of age, presented herself in January, 1896; spindle-celled sarcoma; family history negative; history of tumor outer side, upper third of thigh, twice recurrent. Examination showed extensive involvement of inguinal glands, leg and thigh edematous; injection every other day until March 26th, (the temperature ranging between 101½ and 103) at which time the tumor had entirely disappeared, the swelling and edema having subsided; and evidence of inguinal involvement no longer existed.

Case 2. E. P. L., male, white, 54 years of age, tanner; spindle-celled sarcoma of testicle, recurrent. Admitted to the Protestant Hospital, March 26, 1897. He was treated by injection of toxins every other day, beginning with two minums, gradually increast to fourteen minims. Patient had five chills during the first month, temperature ranging from 101 to 103. He left the hospital six weeks later, altho the injections were continued two months longer. This patient was discharged at the end of three months and a half, with entire disappearance of growth.

Case 3. Inoperable round-celled sarcoma of the uterus. This case was referred to me by Dr. R. P. Williamson. Mrs. W., 46 years of age. During the preceding five months had lost thirty-two pounds in weight. Disease had progrest to involvement of the broad ligament both sides, so that operative measures were not to be considered. The toxins were begun August 2, 1898, and continued every other day until the 17th, when the patient died. There was some reaction after each injection, altho absolutely no change was to be noted in growth.

Case 4. Mrs. S., 58 years of age, first noticed growth in left breast about March, 1897, which was removed in October of the same year. Recurred shortly after, and in February, 1898, I operated, removing the entire breast and some enlarged glands from the axiliary space. I found an indurated mass entirely surrounding the axiliary vein, so that complete removal was impracticable. Microscopical examination showed the tumor to be spindle-celled sarcoma. The wound healed, but within six weeks at the lower angle a growth as large as a pigeon's egg

was to be seen. The arm rapidly became edematous. I began using erysipelas and prodigiosus toxins, injecting at site of growth one minum, which was increast gradually to thirty minims. The reaction was at no time markt, no chill occurring, the temperature ranging from 99 to 102½. After two weeks the growth disappeared and the edema lessened. Injections were kept up six weeks longer, at which time the patient was discharged, apparently well.

## TREATMENT OF ENDOMETRITIS.

BY JOHN C. MURPHY, M.D., ST. LOUIS, MO.

Gynecologist to St. Joseph's Sanitarium; Vice-President of the St. Louis Academy of Medical and Surgical Sciences.

The subject of endometritis has been so much written about it would seem that nothing more of interest could be added; but tho this be true, it is well to have repeated some well-known facts, lest they be forgotten. The condition of which I will speak is one which is met so frequently, and one upon which so many greater evils depend, that I fancy a brief review of the subject will not come amiss. Endometritis is a frequent cause of sterility, thereby preventing womankind from procreating the race and withholding from them that greatest of God-given privileges —the right of motherhood. I doubt not that many a woman has found her way to the surgeon's table from this cause (neglected endometritis), and been deprived of some of her generative organs; and thereby possibly has been prevented from giving to the world another Washington, a Gladstone or a Bismark. An early and prompt recognition of the condition is necessary in order to prevent greater evils. The startling increase of sterile women causes the thinking man to pause, and marvel as to what the ultimate outcome of the human race is to be. More than one European monarchy is on the verge of dissolution and decay from this cause. For the same reason the preservation of the greatness of our own glorious nation is at stake; and its future therefore, in a measure, lies in our hands. So it is our duty, not only as physicians, but as citizens, to do our utmost to preserve the one and only medium through which greatness can come into the world.

As to the etiology of endometritis, some authors contend that direct infection alone is responsible for the condition, and doubtless this is true in a great many cases, but there are many conditions that predispose to the trouble, and, in fact, invite infection, such as cervical lacerations, uterine displacements, intra-uterine growths, sub-mucous fibroids, sub-involution after parturition, bad hygiene, etc. and sometimes it seems to be but a local manifestation of a generally depraved condition of the entire feminine organism. Under the head of direct causes, I will put gonorrheal infection and dirty and incomplete midwifery. Under this head also should come abortion, and many a woman has gotten endometritis from the germ-reeking filth that lies hidden beneath the finger nails of her accoucheur. I have seen men, and so-called good men, too, come in and run their fingers into the vagina of a woman in labor, without even going through the formality of washing their hands; and in view of what we sometimes observe in this way, it causes one to marvel why the consequent disaster is not even more far reaching than it is. My only explanation is that Divine Providence watches over suffering humanity; and I hope the Almighty forgives the unclean doctor, as he forgave his executioners, when he cried out, "Father, forgive them for they know not what they do!"

Not only should we surround our obstetrical cases with all the barriers to infection, but we should be equally cautious in our daily minor gynecological practice. We should be very cautious in our examinations, cleansing our hands and instruments with the same care that we would for any minor surgical procedure; and even this is not enough. I believe that, as a prophylactic measure, every patient who comes to us for a vaginal examination, should have an antiseptic douche of bichloride or carbolic acid solution. It has been proven by the researches of such men as Hausmann, Lomer, Bumm and others, that the entrance to the normal vagina is rich in micro-organisms such as the staphylococci (pyogenes aureus et citreus), and streptococci, which, while they may remain in a quiescent or attenuated state in the vagina, are easily developt into activity if they gain entrance into the uterine cavity; and even tho we may take the precaution to sterilize our instruments, it is possible to make them the carriers of infection by their passage through the vulva, if this precaution is overlookt.

As to pathology of endometritis, I speak but briefly, as space does not permit of my going into an exhaustive review of the subject. I will not divide endometritis pathologically into the usual distinctive divisions of inflammation of the neck and inflammation of the body of the uterus, because pathologically the changes are essentially the same. In the chronic form (the variety with which this paper principally deals, according to Thomas and Munde, is essentially a glandular disease, leucorrhea being due to the hypersecretion from the utricular glands. At post-mortum examinations, microscopically the glands are found to be enlarged and elevated, the mucous membrane is found to be soft, swollen, pale or smooth, or it may be found covered with granulations. In long-standing cases, the utricular glands may be found obliterated or their orifices closed, their contents retained and the gland formed into a cyst. Numerous mucous polypi may be found springing from the endometrium. The whole uterine body may be swollen, and to the touch feel soft and boggy.

The symptoms of endometritis vary according to the amount of involvement locally; in some there will be little or no general involvement, the only evidence of disease being the discharge, while in others the entire organism seems to be included, and we often see a pitiful picture of mental and physical collapse. Neurasthenia, hysteria and other allied nervous phenomena take possession of the unfortunate woman, and she becomes a burden to herself and those with whom she comes in contact. Dyspepsia, constipation, headache, backache, etc., are included in her miseries. In my experience, the higher up in the social and intellectual scale a woman is, the more delicately organized becomes her nervous system, and consequently the mose susceptible it is to irritating influences, and the graver becomes this disease.

In attempting a diagnosis of endometritis, we must not lose sight of the fact that a great many inflammatory diseases of the female generative organs produce, in a measure, the same group of symptoms, such as pain, leucorrhea, dsymenorrhea, nervous and digestive disturbance, etc. So we must not take snap judgment on cases that present themselves, lest in so doing we overlook some graver condition. I have known cases of carcinoma uteri to be treated as a simple endometritis until the disease had reacht an advanced stage. So we must have constantly before our minds' eye a clear picture of all the conditions that might simulate or complicate endometritis. We must make our diagnosis by exclusion. We should determine carefully the condition of the tubes and ovaries both by vaginal and rectal examination, as we are liable to find that the disease includes the tubes as well as the uterus, since structurally they are identical and consequently susceptable to the same character of inflammation. We should also think of the possibility of cancer, especially in women approaching or past middle life. When we have become satisfied that there is no further involvement beyond the uterus itself, the direct examination will aid us. On palpation the uterus will be found to be enlarged, will have an edematous feel, the cervix will feel large and velvety, and if lacerated the examining finger will detect its presence. The subject will probably complain of considerable pain on the uterus being manipulated or moved about in the pelvis. On direct inspection through the the speculum a discharge is seen escaping sluggishly from the os uteri. This discharge may vary in character from a glairy mucus to a purulent or hemorrhagic variety, according to whether the inflammation be catarrhal, purulent or hemorrhagic in character. The uterine cavity is usually increast in depth, the sound sometimes passing three and one-half inches. The passage of a sound is usually painful, but not infrequently we see the uterus displaced to such an extent that the passage of a sound into its depths is impossible.

In considering the treatment of endometritis I will speak first of the cervical type. It is in this variety that we must put forth our greatest curative efforts and attempt to remove the disease, lest it become more grave by invading the body of the uterus, and adjacent organs. Before taking up the treatment in detail, I wish to make a few general remarks that are applicable to all varieties of chronic uterine inflammation. We must not confine our efforts to purely local measures, but we must try to correct any other existing evil that may be present. For instance, if a patient comes to us in that so-called "run-down condition"—as most of them do—we must try to restore her physical equilibrium, we must enrich her blood with proper tonic treatment, so that her generative organs will be nourisht with a blood that is rich in the elements of repair and regeneration. Her general system must be sustained, irregularity of the bowels must be combatted by the use of aperient mineral waters,

which not only empty the intestinal tract, but, to a great extent, relieve pelvic congestion. Nervous manifestations must be controlled, and I am a great believer in the efficacy of the bath in this condition. A general bath should be taken at least daily, and that at bedtime. It should be graduated, ranging from the the body temperature, down to 70 degrees Fahrenheit. The bath is remarkably tranquilizing to the nervous system, and is almost sure to be productive of a good night's sleep.

As to the measures directed to the cervix itself, a great many different modes of treatment have been practist. Some gynecologists seem satisfied to keep up an endless treatment with borogylcerine tampons and hot douches, which, in my experience does little good; in fact, while the gynecologist is "killing time," time is often killing his patient; while he is filling the vagina with tampons, the disease may be progressing upward. The endometirum may be becoming involved, and it is only a short step from corporeal endometritis to salpingitis and ovaritis, and then we have to deal, not with a simple endocervicitis, but an inflammation of the entire genital tract, with probably an abdominal section as the only means of relief; and a woman deprived of the power of procreation, realizes that she is a woman in name only.

Paul F. Munde, in writing on this subject in conjunction with T. Gaillard Thomas considers the treatment as essentially surgical. He dilates the cervical canal, and with a sharp curet systematically scrapes the cervical mucous membrane up to the internal os, until all the glands upon which the secretion depends have been destroyed. He then thoroly mops out the canal, which then is packt with a strip of iodoform gauze. The tampon is removed in 48 hours and another replaced. This is repeated until the slough from the cervical canal has separated, after which nitrate of silver one dram to the ounce, or iodized phenol is applied twice weekly until all secretion has stopt, and the uterine orifice has regained its normal size. Hot vaginal douches are recommended throughout the treatment.

Garrigues follows much the same plan of treatment as Munde, with the exception of the use of the galvano-cautery to the cervix, as suggested by Apostoli.

Emmet of New York, is inclined to look upon a lacerated cervix as the principal factor in this trouble, but as it is often seen in women who have never borne children, it can at least be only one among the number of causative factors. Needless to say, if found it should be repaired, not only on account of the existing trouble, but as a prophylactic against future trouble, as statistics will show that cancer of the uterus in a large proportion of cases originates first at the point of an old laceration.

The treatment as outlined by Dr. Munde is, to my mind, the most rational and the plan I follow in my own practice.

For the relief and cure of chronic corporeal endometritis, many plans of treatment have been suggested and devised. Some authorities confine their treatment to various applications directly to the endometrium. Garrigues claims to have had excellent results by applying tincture of iodine, chloride of zinc, chloride of iron, and even silver nitrate directly to the endometrium by means of absorbent cotton wound about an applicator. He also advises painting the vaginal vault with tincture of iodine and the daily application of a glycerine tampon. When the uterus is much congested, he scarifies the cervix. In my own hands this plan of treatment has only been palliative in its effect.

Bagot uses nitrate of silver in a solution of equal parts chloride of zinc, perchloride of iron, the thermocautery or actual cautery. He applies the caustic by means of a long whalebone applicator wrapt about with cotton.

Treating endometritis by injections into the uterine cavity is still followed by some, but the manifold dangers surrounding such treatment has caused it to be discarded by the majority of gynecologists. The principal dangers of this practice lay in the forcible dilation of the uterine cavity and the possible escape of the fluid into the Fallopian tubes, thereby causing shock, peritonitis, etc. In any event, injections either of plain or medicated solutions should not be made into the uterine cavity without first dilating the cervical canal which, in a measure, obviates or diminishes the dangers.

Munde says that in certain cases he has been able to get good results from the persistent use of tincture of iodine and carbolic acid in equal parts, but the treatment must be continued for several months.

In this form of endometritis, as in the cervical, I have placed my chief reliance in the curet, which, if properly used, I think holds out the best hope of cure. By dilating the uterus under anesthesia, we are enabled to explore its cavity, either with the sound or better with the finger, and we are thus able to determine just the pathological condition that exists. The presence of polypi are made known to us, or the presence of any other causative factor that might be instrumental in producing the trouble. When the less radical measures mentioned above have failed, my plan has been to place the patient under an anesthetic and surrounded by all the antiseptic precautions to bring down the uterus with a vulsellum and dilate the canal with a Palmer dilator, and to carefully and thoroly curet the entire mucous membrane. We are enabled by this means to remove all the fungous vegetations which are a fruitful source of bleeding—in short, to get rid of the diseased tissue and stimulate the uterine mucosa to healthy new growth and regeneration. After the curetting it is advisable to wash out the cavity with a warm carbolized douche (1: 100) to remove the debris. The cavity then should be dried by means of plain gauze, and then we may apply either tincture of iodine and carbolic acid, or if the hermorrhage has been troublesome, perchlodire of iron may be substituted. The excess of the last application is to be washt away carefully and a strip of iodoform gauze placed within the uterus, the vagina packt and the patient put to bed. It is advisable to keep a cold application over the hypogastrium for 24 hours as a sedative to pain, and to control any possible inflammation. In 48 hours the tampon and gauze is removed and hot vaginal douches given twice daily. The patient is usually about again in a week or ten days. This plan of treatment I have found to result in great good in many cases. I need not repeat that if polypi exist they should be removed and a lacerated cervix repaired. I wish to add that if displacement exists, it is frequently due to the increast weight of the fundus, and the use of the curet in addition to its other advantages diminishes the size of the fundus, and when the excessive weight is removed, the displacement will frequently correct itself.

Lastly we have to consider that form of endometritis in which in spite of our efforts hemorrhage persists. Fritsch advises ligation of the uterine arteries. Some have even gone so far as to perform castration to produce an artificial menopause, or a vaginal hysterectomy to remove the source of hemorrhage completely. Personally I have had no experience in cases of this exaggerated type.

## REPORT ON THE PROGRESS OF GYNECOLOGY.*

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The practice of the principles of Listerism in the surgery of the closed cavities of the body has had its influence in the gynecologic field, and within the past few years we have had a great deal of gynecic surgery, which was an unexplored field to our teachers. The office practice of the gynecologist of ten or fifteen years ago has given way in a great measure to the surgical procedures in the operating room of well appointed hospitals. Tampons, pessaries and artificial uterine supports, together with the depletory measures in inflammatory conditions of the uterus and its appendages, are rapidly going out of fashion, and the tendency now is toward surgery in all such cases. A wild rush in the direction of surgical interference has been instituted and the overzealous have probably gone too far, forgetting that much good can be done suffering women by non-surgical methods. Is it not yet too soon to convert our "office treatment rooms" into rooms for examination only? Shall we of to-day declare that Albert Smith and Hodge, the inventors of the best uterine pessaries, lived in vain; or that the depletion of the uterus and its appendages, as obtained by use of the gylcerine tampon and other medicaments cannot be followed by as good results as formerly? I dare say a calm consideration of the subject will convince us that the pendulum may have swung a little too far in the direction of surgery. Mistakes as to the necessity of operations are rapidly cropping out. Women whose ovaries have been removed for any and all sorts of nervous troubles haunt the office of the a-few-years-ago-enthusiastic oophorectomist. Broken promises of such cures are many, and the disappointments of both patient and surgeon are harassing in the extreme. True, as Palmer states, "there are in medical minds great differences in estimating the importance and necessity for surgical operations." Doleris has said that "five out of seven cases of oophorectomy done in Paris have been unnecessary and unjustifiable." Dr. C. W. Chancellor, United States Consul at Havre in 1896, estimated that "in Paris alone over 40,000 women have been subjected to oophorectomy and hysterectory since 1883; and 50,000 in other

*Abstract of paper before Missouri State Medical Association.

parts of France at the same time." "Many," he says, "are in a more deplorable condition than before; not more than 5 per cent are benefited." How often done needlessly in this country it is impossible to estimate. A large number of healthy ovaries have certainly found their way into pickling pots, and many have been exhibited in medical societies, and the cases reported cured. Yet upon the other hand we cannot deny the good that conscientious men are doing in the field of gynecic surgery all over the world. Through the gate of abdominal surgery has been the revelation of the truth concerning inflammatory disease of the uterine adnexa; so that we now seldom hear of that (to us) rare disease, pelvic cellulitis.

What has just been said in regard to inflammatory affections is equally true in regard to abdominal neoplasms. Exploratory incisions (under modern aseptic precautions) have taught us much as to the nature, growth and susceptibility to removal of these growths.

## CYSTITIS.

The treatment (surgical and medicinal) of this affection in women has undergone but little change during the past ten years. The medicinal treatment is of course influenced principally by the chemical and microscopical findings in the urine, more particularly the former. The systemic conditions, therapeutically considered are, of course, of paramount importance. If hyperacidity and alkalinity are met with, the administration of remedies to change the chemical reaction is necessary. Potassium citrate, introduced years ago, has as yet found no rival that will equal it in relieving hyperacidity. Combined with the salicylate of lithia it is a remedy par excellence in cases of rheumatic origin. The taking of large quantities of water daily serves well to keep the bladder flusht out. One of the best flushing agents I have found is the infusion of couch grass. It is superior to the fluid extract of triticum repens found in the shops. I direct that one and one-half tablespoonfuls of the dried grass be put into one pint of water and boiled to one-half pint, and this is to be taken in three or four doses during the day.

Cystitis of gonorrheal origin is a very much more common disease than we at first would suppose, and is probably a form of the disease much more difficult to cure. The bladder, when once infected, seems to be a wonderfully fertile field for the propagation if micro-organisms, whether of gonorrheal or other origin. The thoro and constant flushing out by means of bland diuretics is the keynote of success in the treatment of this most distressing malady. Washing out of the bladder by means of the catheter, no matter how constructed, is a practice to be condemned, save in exceptionally stubborn cases. The danger of the introduction of heterogeneous agencies, altho the strictest aseptic rules may be observed, is always great, and the possibility of converting a simple infection into a mixt one by no means rare.

The obstetric bladder, or, in other words, the bladder that has been torn from its moorings during the process of delivery, either instrumental or otherwise, becomes a sacculated bladder, forming the condition known as cystocele. This condition not only predisposes it to inflammatonry disturbances, on account of poor drainage and a consequent decomposition of residual urine, but when once it has taken on an inflammatory process, it most usually gives the practitioner more concern than any other bladder inflammation. After the thickening of the walls of the viscus, the tenesmus becomes severe and calls for surgical interference. While endoscopic treatment is, in some cases, followed by beneficial results, in the majority of instances the results are disappointing. The surgical treatment as taught us by Emmet can then alone give relief. This consists in making in the base of the bladder an opening into the vagina, care being taken to unite the vesical mucous membrane with a continuous catgut suture to the vaginal mucous membrane. This procedure prevents the too early closing of the fistula. The rationale of this operative measure is to insure physiologic rest and free drainage. The vesico-vaginal fistula can be closed at any time after the cure of the cystitis.

## VAGINITIS.

It may be considered somewhat unnecessary to discuss the treatment of so common a trouble as vaginitis, yet to the gynecologist it is almost his daily duty to attend patients suffering from this disease. A review of the subject somewhat surprises the investigator by showing that the literature written the past few years is rather scant. This is probably due to the fact that more attention has been paid to the surgical treatment of diseases of women. Realizing that no operative work can here be done for the relief of this malady, the subject has been but lightly toucht upon. Kelly, in his new work entitled "Operative Gynecology," dismisses the question with about three pages, two of which are devoted to the classification of the different forms. Nothing new is given as to the treatment. The injection of astringent solutions and topical applications of nitrate of silver solutions of various strengths is about all he suggests. He claims that the gonorrheal variety is rare, and cites Bumm as authority, who declares that he has seen only five cases. This statement can hardly be indorst by the careful observer, who realizes that a great majority of cases of vaginitis are due to uterine, irritating discharges, due to gonorrhea. Still, not a few are due to vaginal causes alone. Bacteriological examinations of the discharges, made in obstinate cases, very frequently reveal the true nature of the trouble to be due to an affection of the vagina alone. In the simpler forms, the ordinary astringent solution of varying strength may be employed. Boric acid; sulphate or acetate of zinc and lead; five to ten per cent solution of silver nitrate—all sometimes cure.

In the specific variety, topical application to the entire length of the canal will alone suffice. The posterior vaginal fornix should require particular attention in this regard; and special care should be taken to prevent the entrance into the cervix of the specific poison. The new silver preparation, protargol, in a 2 per cent solution, is probably the most efficient remedy in our hands at present.

Before dismissing the subject of vaginitis it might be well to mention briefly the tubercular variety of the disease. I have seen two cases of the disease which were very markt in their obstinacy to treatment by local measures. Tonic treatment of such cases demands our consideration.

## METRITIS AND ENDOMETRITIS.

I have thought it best to consider inflammation of the womb and its lining under one head. Aside from chronic inflammation, the rationale of the treatment, altho differing materially in execution, is the same in both cases. Hot water douchings, applications of different iodine preparations to the cervix and vaginal fornices, the boro-glyceride wool tampon as a depletive agent for corporeal inflammations, and if due to an absorbing area on the cervix, whether a simple erosion or one due to ectropion or a torn surface, which is constantly acting as a gateway to general septic infection, then a trachelorrhaphy is not only indicated, but demanded. If this operation is rejected by the patient, or is not accepted by the medical attendant as the proper treatment, the case drifts along into almost hopeless invalidism. This is a condition that often leads to further extension of inflammatory disease, involving the adnexa, producing displacements, versions and flexions, with or without fixations. Together with the application locally of the remedies I have indicated, a proper support, afforded by a properly fitting pessary, should not be forgotten.

I would here like to emphasize the matter of the proper fitting of a pessary. If we are accustomed to the use of a particular kind of pessary, let us be sure of three things: First, that it conforms to the parts to which it is applied; second, that it is properly adjusted upon the bearing points, which are the inner surface of the symphisis and the posterior vaginal fornix; third, that the pressure it exercises is in a proper direction, so as to overcome the deviation of the uterus from the normal pelvic axis. If we fail to keep in mind these rules, the pessary cannot be expected to be of benefit and is sure to do harm. As to the first rule, a pessary should fit the parts to which it applies with a degree of accuracy near that of a tooth plate to the roof of the mouth. As to the second rule, without a regard to proper adjustment the pessary slips from the vagina or turns upon its own axis and produces excoriations. As to the third rule, unless the curve of bearing is such as to bring the uterus into the proper pelvic axis it will do no more good than any tampon, in fact not as much.

Bacteriologic findings have taught us that most intra-uterine disease is due, either primarily or secondarily, to the work of pathogenic organisms; so that in the application of remedies we should work along these lines. First comes the establishment of good drainage; if the uterus has been properly adjusted we have placed it in the most favorable position to obtain this. Second, intra-uterine antiseptic applications of the tincture of iodine, with carbolic acid, weak solutions of formol by means of the intra-uterine applicator and intra-uterine antiseptic douching. The remedies giving the best results are creoline, bichloride of mercury and nitrate of silver, in proper dilutions. Too much care can not be observed in the execution of the treatment of the uterine mucosa, for fear we may do more harm than

good by carelessly admitting septic organisms. Before the introduction of the vaginal speculum the vagina should be thoroly scrubbed out with green soap and then doucht with a bichloride solution. Uterine sounds or probes should never be introduced in one's office, even for diagnostic purposes, unless the vagina has been thoroly cleansed.

### FLEXIONS AND VERSIONS.

Aside from trauma, which, of course, is rare, the etiologic factor in all cases of flexions and versions is the previous inflammation of corpus uteri, whether its starting point was in the endometrium or not. Subinvolution is probably, in the child-bearing woman, the most frequent inciting cause. Some two years ago I began making inquiries of women who came to me for treatment for inflammatory conditions of the uterus and appendages, as to the posture they occupied in bed during their lying-in period, and was struck with the uniformity of answers, which were that their physicians had advised them to always lie upon the back, whether asleep or awake. I am satisfied that this is a potent and very common cause of uterine version. It stands to reason that with the patient in this posture for a week or ten days, the circulation in the uterus is necessarily interfered with, and without this the normal fatty degeneration can not take place. I have for some years in my obstetric practice encouraged my patients to assume the lateral decubitus as much as possible, first one and then the other. With a well-fitting abdominal binder, not too tightly applied, the patient is more comfortable—the uterus falls forward into its normal position and the lochial discharges drain better from the vagina. By changing from one side to the other involution is better brought about.

Next to puerperal causes of metritis may be mentioned those incident to menstruation, exposure during the flow, violent exercise, dancing and bicycle riding, or any undue exercise, and gonorrhea. The inflammation may, in many instances, travel along the uterine mucosa, and, by continuity of surface, salpingitis may develop before a true metritis be present. The Fallopian tubes become heavy and fall into the cul de sac of Douglas, pulling the uterus backward and downward and producing either versions of flexions. In these instances we have a Fallopian tube leaking into the peritoneal sac, or an adhesive inflammation of the fimbria, resulting in a club-shaped tube and a descensus of the tube following, which drags with it the uterine body. The treatment in the acute form is the treatment of metritis and endometritis, with a proper support of a pessary. If the inflammation subsides, and the formation of adhesions and a consequent fixation of the uterus occurs, nothing short of abdominal section will suffice. It is foolish to insert pessaries into the vagina to support the uterus when strong adhesions are binding down the body. Cases so treated get progressively worse, and frequently result in tubal, ovarian and pelvic abscesses. This, together with the careless introduction of the uterine probe, is what may be styled "uterine tinkering."

As to the operative work done for the relief of flexions and versions, vetro-fixations or uterine suspensions seem to promise the best results. Alexander's operation, in my hands, has, except in a few cases, been a failure; and in cases where there exists a doubt as to adhesions around the brim of the pelvis, it is capable of positive harm. Colpo-hysterorraphy is not based upon rational grounds, and is not a safe procedure. Ventro-fixation, when judiciously done, is followed by good results. I am aware that claims have been numerous as to the bad after-effects of this mode of fixation: Interference in subsequent pregnancies, danger of entanglement of bowel, uncomfortable dragging on abdominal scar, bladder pains, liability to ventral hernia, etc. Kelly, in his "Operative Gynecology," has met these objections and shown them to be groundless when the operation has been properly executed.

It has been my fortune to attend three women in confinement upon whom this operation has been performed. In two of these I had operated; in the third case a competent Eastern surgeon. The delivery in one case was followed by a slight post-partum hemorrhage. The other two had no trouble whatever. Unfortunately, the great majority of women who have chronic retro-deviations are neurasthenic, made so by long-continued suffering, so that convalescence and recuperation is necessarily tedious.

### FIBROIDS.

Electricity has had its day; medicinal treatment has not been followed by results promist; and, after the patient has gone the rounds, she comes to the operator to apply the knife. The indications for operation should be: (1) Rapidity of growth; (2) hemorrhage; (3) general discomfort of the patient. The technic of the operation, and the selection of the operation, must necessarily be in accordance with the particular growth and choice of the operator. Amputation and fixation of the stump to abdominal wall has, up to the present, in my hands, given the best results. No hernias have been reported to me; no dragging on the abdominal wound has occurred. And while in the majority of cases it has been practist by me, I have of late done several total hysterectomies, and have lost my first patient. She died of sepsis, and was probably infected through the vagina, tho the utmost care was taken to avoid this; but the bad result came, nevertheless.

## CORRECTION OF NORMAL DIVERGENCE AND DIVERGENCE BY POSITION OF THE X-RAYS.

BY HEBER ROBARTS, M.D., ST. LOUIS, MO.
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To be able to do useful X-ray work four surmountable barriers confront us; that is, four propositions that must be mastered before we should assume to make a positive diagnosis by the aid of the X-rays.

1. A generating apparatus and accessories capable of showing such things as the hip joint, tumors of the brain and the right and left heart.

2. The fluorometer, which, with mathematical precision, corrects distortion.

3. Knowledge of X-ray technic; knowledge of anatomy and pathology.

4. Ability to desynonomize and specialize the varying shadows on a screen.

The second proposition will occupy our attention at this time.

Prior to the public announcement of the discovery of the X-rays, Prof. Roentgen had observed that the emanations from a Crooke's tube went on to infinity; but on leaving the tube this radiant energy diverged with constancy and with uniformity. At the Wuerzburg Physio-Medical Society in December, 1895, when the preliminary report of the discovery of the X-rays was made, is was very little thought that it would ever be used by the diagnosticians. As early as February of the following year, however, it was conceded by those acquainted with the subject that the X-rays had a permanent place in diagnostic medicine. It was already being employed to locate bullets and other foreign objects impervious to the rays. But when surgery was done, for the purpose of removing these opaque substances, the objects were found to be increast in size, and when far removed from the surface, so much distorted as not to be recognizable. Divergence, therefore, became a bugbear, and physicists everywhere were unsuccessful in devising means for its practical correction. This element of divergence we speak of as normal, because of its constancy and primarily emanating from the generating source.

At a single point on the platinum disk, where the cathode rays impinge upon the anode, is the source of the Roentgen rays, and at this point the rays emerge, going out at an angle divergence thirteen-sixteenths of an inch in every sixteen inches of travel. If we have an object to examine, as for instance, a tumor of the brain, located in proximity to the Pineal gland, it will be distant from the fluorescent screen three inches. Then the tumor will have the appearance of being three-sixteenths of an inch larger than it really it. This defect in the picture may be sufficient in some instances to lead the surgeon into erroneous judgment, and preclude what might have been a safe operation. But with the fluorometric readings of to-day it is a simple matter of mathematics to determine the actual size of any body shadowed on a screen.

A greater difficulty which the surgeon had to encounter was the distortion occasioned by position. This condition made the diagnosis treacherous, uncertain and sure to misguide. The cause of this greater divergence was made more apparent by the discovery by Mr. Edison of the fluoroscope. An X-ray picture is a shadow without thickness on a fluorescent screen. The Crooke's tube is the emanating source of energy, as light is from a candle. The object to be seen must be interposed between this tube and fluorescent screen. The shadow will be distorted precisely in the same manner as an object interposed between a candle and white wall. We can well recall the grotesque pictures we made on the wall with the fingers of the hands in childhood days or were made by grown persons for our amusement. They practically illustrate the errors possible in X-ray work of to-day, in the possibility of distortion—either designed or accidental. This element of divergence is said to be by position. It is really not a divergence but a distortion.

In the case of the tumor of the brain previously mentioned, divergence of the rays were shown to be unalterable and, therefore, the size of the object easily calculated. Now it is necessary to locate the tumor with precision, if diagnosis and surgery are needed. If the body is fixt the object will appear to be fixt also; but the slightest rotation will shift the shadow and change its outline, giving the appearance of fixation at another site. This movement can be effected at will. Should the object to be examined lie near the screen, rotation of the body will not be attended with very great distortiou; but greatly so, if far removed.

It is in this manner that erroneous opinions have become current; to the effect that a sound bone may be made to appear fractured and a fractured bone sound. In neither of these cases can this be done unless some extraneous device is employed. Fractures and dislocations can, however, be made to appear grossly exaggerated, or such malcondition may be made to appear in almost normal position. An operator ignorant of anatomy and of the principles of divergence may do either of these innocently. This is a vital point on which medico-legal cases will hinge.

It became apparent that unless distortion by position and normal distortion could be corrected it would be unsafe to employ this means in diagnosis for the surgeon and worthless, if not dangerous, in courts of law. In the spring of 1897 Mr. Dennis, of New York, conceived of a method wherein the parallelism of the X-rays could be effected, and made the device to this end for practical purposes. Mr. Puffer, of the same city, called the device a fluorometer, because it measured the shadow on a fluorescent screen.

The fluorometer consists of right angle devices impervious to the X-rays, together with wooden supports and an adjustable table. It provides:

First, a perfect shadow, when thrown on a screen or sensitive plate.

Second, elimination of the distortion resulting from radiant energy known as the X-rays.

Third, the normal distortion and distortion by position having been eliminated, the flouorometer provides an accurate cross-section of the body and supplies an absolutely correct right angle, at the intersection of the lines of which the foreign object will be found in the body.

As a final conclusion it may be stated that without the evidence of a fluorometer having been used, clearly shown by its own shadows in the radiograph, no X-ray picture should be admitted as evidence in any court.

## A VISIT TO SAINT BARTHOLOMEW'S HOSPITAL, LONDON, ENGLAND.

BY O. BEVERLY CAMPBELL, A.M., M.D., ST. JOSEPH, MO.

Professor of Abdominal Surgery, Central Medical College; President Tri-State Medical Society of Illinois, Iowa and Missouri; First Vice-President of Western Surgical and Gynecological Association; Surgeon to St. Joseph's Hospital, St. Joseph, Mo.

This illustrious old hospital and medical school is located in the heart of London, one minute's walk from the general post-office, and two minutes' walk from the Bank of England.

Its founder (Rahere), tradition has it, was once suffering so severely from an attack of malaria in not overly well-appointed apartments where the hospital now stands that he made a vow that should be recover he would found a hospital upon that spot for the worthy poor. Accordingly, upon his recovery, in the year 1123, he founded St. Bartholomew's Hospital. The hospital had a constitution and an estate, but was controlled by the priory which Rahere subsequently founded. The hospital was in charge of a master, eight brethren and four sisters, its community being under the control of St. Austin. Henry VIII. came into possession of the hospital and its revenues, and at the petition of Sir Richard Gresham, then Lord Mayor of London, and father of Sir Thomas Gresham, refounded it by royal charter in 1544. In 1547 he granted it a new charter, which gave back to it the greater part of its former revenues. "Considering the miserable estate of the poore, aged, sick, low and impotent people, as well men as women, lying and going about begging in the common streets of the said City of London and the suburbs of the same, to the great pain and sorrow of the same poore, aged, sick and impotent people, and to the great infection, hurt and annoyance of His Grace's loving subjects, which of necessity must daily goe and pass by the same poore, sick, low and impotent people, being infected with divers great and horrible sicknesses and disease."

The following are probably the most noted men that have been connected with this hospital: Thomas Vecary, sergeant-surgeon to Henry VIII., Edward VI., Mary and Elizabeth, and the author of "The Englishman's Treasure," the first work on anatomy printed in the English language; Harvey, tne discoverer of the circulation of the blood, was physician to the hospital in 1609. Percival Pott (preceptor of John Hunter) and Drs. William and David Pitcairn.

"The clinical practice of the hospital now comprises a service of 744 beds; of these 233 are allotted to the medical cases, 336 to the surgical cases, 25 to diseases of the eye, 34 to the diseases of women, and 46 to general and isolatiou cases; while 70 are at the Convalescent Hospital, at Swanley. Children are admitted into both the medical and surgical wards, those under five years of age being received into the female wards. In the year 1897 relief was afforded to 6,383 in-patients and to 144,401 out-patients, besides 1,756 women attended in their confinements at their own houses." The exterior of the hospital is of old English style of architecture; it looks old and rather dingy. Mottoes and quotations from the Bible are seen over the great gateway and over the doors and windows. The visitor enters at the great gate into a large hallway, in the center of which is a paved drive, on either side of which are walks for footmen. Near the rear of the hallway and to the left as you enter, is the original chapel where services are still held. The hallway leads unto an open square or court furnisht with a few summer-houses and seats for convalescing patients, and for students. This court is paved, and from it any portion of the hospital may be entered.

One of the hospital staff physicians, showed me through the dissecting room, laboratories, library, museum, wards and operating rooms, the grand hall and the quaint old chapel. The laboratories are very well equipt. A few students were found here engaged in bacteriological and chemical work. The library is large and well-supplied with books and magazines. The museum consists of one very large room with a gallery. Here are to be found about ten thousand specimens, some of which are very old. A very interesting collection of specimens of malformation in the human, and in some of the lower animals are found here. The pathological specimens are very excellent, every variety of disease, and probably every organ of the human body, are to be found here. The specimens are numbered and lettered upon their jars, these numbers and letters are recorded in printed books, to be found upon the shelves, where a terse history of the malformation, or the pathological specimen is given.

The lower and older operating room and amphitheater is located upon the ground floor, with a seating capacity for about 200 students. It is poorly lighted, is dingy, and could hardly be said to be "modern" in any particular. The upper operating room is just completed, has seating capacity for about 50 students, and is modern in every sense.

I witnest but one operation in this room. Mr. Marsh, one of the surgeons of the hosptal, was engaged in amputating a breast for carcinoma. The operation was very beautifully and thoroly performed, the ribs were made bare, and the lymphaties removed. I witnest operations performed by Mr. Willett, Mr. Langton and Mr. Harrison Cripps upon two different afternoons, in the lower operating rooms. Mr. Langton removed the greater portion of the scapula for osteo-sarcoma. Mr. Willett performed supra-pubic cystotomy upon a boy 12 years of age, removing a stone weighing 250 grains. A soft catheter was past into the bladder, the hose from the irrigating bottle containing warm sterile water was attacht, and the bladder distended. No aparatus of any kind was placed in rectum to raise the bladder. The stone was not encysted. The bladder was sutured to the parietes, and a portion of the abdominal wound closed. A small gauze drain was placed through the remaining abdominal wound into the bladder. The abdomen was drest in the usual way, with iodoform gauze, cotton and a roller bandage. The time occupied in performing the operation was 32 minutes.

Mr. Willett's next case was right inguinal hernia in a young man of 20 years of age. McEwen's method was used, with very slight, if any modification.

I next witnest Mr. Harrison Cripps operate for the closure of a fecal fistula, situated equidistant between the ensiform cartilage and the navel in the linea-alba. The patient was a boy 10 years of age, who had been operated upon for tubercular peritonitis two months previously. A fecal fistula was establisht at that time, but the reason therefor was not stated. This operation required considerable time, on account of the mattetd condition of the intestines. Ex-section of the intestine was not

made, the opening being simply closed with Lembert sutures of fine silk. The peritoneum was closed with continued suture of cat-gut. Silk sutures were used in closing the parietes.

The usual aseptic technic of modern surgeons was not practist in performing any of these operations. The instruments, it is true, had been sterilized, and some pretense was made toward cleansing the operative field before operation, but it was not thoro. The nurse who had charge of the instruments, bringing them in from time to time in trays, was atttired in an ordinary suit of clothes, and wore cuffs which toucht the tray. One of these surgeons, while at work within the abdomen, deliberately, at two different times, with both hands moved the stool upon which he was seated, closer to the operating table, and positively failed each time to cleanse his hands, before resuming his work. One can hardly imagine an American surgeon of even "cross-road" fame, guilty of such a serious blunder.

This hospital and college is said to have in attendance several hundred students, yet there was just ten present at the operations on my first visit, and six on my second visit. Quite a number could be seen in the open square,probably a number in the library, etc., but it would seem that either the students did not care to see the surgery, or if required to do so, the discipline was very lax. Indeed, the impression made upon me during my visits to the hospital, was that as a school and modern hospital, it had surely "fallen behind in the procession," and that the most that can be said is that Harvey was once physician to it! I certanly think the student of medicine could do better than to spend five or six years of his life in this antiquated place.

## REPORT OF A CASE OF ORCHIDOPEXY COMPLICATED BY HERNIA, WITH PRESENTATION OF PATIENT.

BY C. M. NICHOLSON, M.D., ST. LOUIS, MO.

Professor of Anatomy and Genito-Urinary Surgery, Beaumont Hospital Medical College.

On the 15th of last September Mr. S. C. S. presented his son, who was 13 years of age, at the office of Dr. H. J. A. Seiving, anxious to know the cause of the absence of his boy's testicles. On examination the doctor found the scrotum empty. The right testicle was plainly to be felt just outside the external abdominal ring, tho very much smaller than would have been expected in a boy of his age. The left testicle, about the size of a kidney-bean, could be felt in the inguinal canal a quarter of an inch from the internal abdominal ring. The patient was referred to me, and I first saw him on the 25th of September.

My examination confirmed the observations of Dr. Seiving. I advised making an effort to bring the right testicle into the scrotum by manipulation, but explained to the father that the left testicle could be placed in its normal position only by operative measures. I also explained the possibility of failure, for tho Gilliot has reported a case in which he transferred a testicle from the abdominal cavity to the scrotum with satisfactory results, I nevertheless recognized the fact that where the testicle has not past a point at least half way between the internal and external rings the result of operation is very often disappointing, owing to the shortness of the vascular and nerve supply of the gland.

J. William White ("American Text-Book of Surgery," page 902), in speaking of undescended testicles, says: "It is usually unilateral, though occasionally both testicles fail to reach the scrotum. The organ may be arrested during its descent within the abdomen below the kidney, in the inguinal canal, or just outside the abdominal ring. Various operations have been devised for placing and retaining such an organ in the scrotum, but all have been unsuccessful."

In the morning of the 28th of September, I made an incision directly over the gland, large enough to expose it, thoroly, dividing the skin, the superficial fascia and the aponeurosis of the external oblique. While examining the vaginal tunic I found it to communicate freely with the peritoneal cavity; for immediately after cutting the hernial sac across the testicle a nuckle of intestine protruded. This was returned and the hernial sac closed at the internal ring. The distal end of the sac was afterwards closed, thus forming a closed tunica vaginalis. After severing all the fibers of the cremaster muscle and the fibrous envelop of the cord, I took hold of the vas, its vessels and nerves, and made gentle traction until the testicle could, without difficulty be carried beyond the external abdominal ring. Finding the testicle then exhibited no tendency to retract, I thrust my finger through the lower angle of the wound into the scrotum which I invaginated. Three stitches of cat gut were past through the proper tunic of the testicles and epididymus and the deep layers of the scrotum. After stitching the aponeurosis of the external oblique, and making the external ring as small as possible without compressing the cord. I placed a pad in such position as to furnish support to the abdominal wall and at the same time prevent and retraction of the testicle.

The patient was put to bed and at no time during his illness was his temperature more than 99.5 degrees Fahrenheit, pulse 90.

The wound healed by first intention. At present the left testicle is in the scrotum in the position I placed it in in September, and is at least four times as large as it was at that time.

*Read before the Missouri State Medical Association.

## THE AMERICAN MEDICAL ASSOCIATION.*

BY WILLIAM PORTER, A. M., M. D., ST. LOUIS, MO.

Physician to St. Joseph's Sanitarium; Fellow of the St. Louis Academy of Medical and Surgical Sciences.

I would my words were equal to my theme—
But then, if things were other than they seem,
An abler tongue should voice your thought to-night,
Another pen the praises should indite
Of that which claims your fealty; and yet
You will it; I obey; it is "kismet."

We're told, in Bonnie England, when they say
"God bless the Queen," (as well we know they may),
Each truly British bosom swells with pride;
For whatsoever else they do beside,
They're loyal always to the powers that be.
For English bow and stubborn English knee
Have oftentimes been bent to have it shown
How firmly fixt is England's royal throne.
In this fair land 'tis true we have no king
Nor queen, nor ancient throne. No anthems ring
For high-born princeling or presumptive heir,
And yet, somehow, we all allegiance bear
To what is right and royal. So we say,
And say again, "God bless the A. M. A."

I've watched the masons, toiling day by day
To build a massive structure by the way;
Rough-shapen stones and mortar lie around,
While chaos reigns, and fragments strew the ground.
The plans are drawn; the firm foundation made,
And course on course is slowly, surely laid.
Yet all is incomplete until we trace
The outline of the keystone in its place.
Each part by it united, great and small;
They carry it, and yet it binds them all.

We love the stately Hudson. Who does not?
And could we have its history enwrought
With tale and legend, not the far-famed Rhine,
Whose ruined castles still o'erlook the vine,
Could better sing to more attentive ears
Heroic measures from the vanisht years.
Fair river of the East, 'twas on thy shore,
Full half a century ago or more,
A builder, building better than he knew,
Laid a foundation firm, compact and true,
On which to rear a mighty arch; and then
He traced his plan upon the hearts of men,
Of men the workers—men who gave their all,
Who gave themselves—material for the wall.
And so, from where the Alleghenies rise,
With oak and chestnut crowned, toward the skies,
From where Potomac's waters seek the bay,
Or Chattahoochie chatters all the day,
From Western prairies, toward the setting sun,
On whose broad bosom soon to be begun
A life gigantic—from New England's coast,
The home of those of whom we make this boast—
Their fame is more enduring than the shaft
Cut from their granite hills by master craft.
From North and South, from East and West they came,

*Response to a Toast at the Banquet of the Academy of Medicine, St. Louis, March 29, 1899.

Each one a knight as worthy of the name
As those who followed Coeur de Lion's plume
What time he sought to sieze the sacred tomb.
But change we not the figure, for these men,
While knights of high empire, loved more the pen
Which in their hands was "mightier than the sword."
With heart and brain they wrought with deed and word;
They built an "Arc de Triumph" that might tell
Of principles and truths revered so well.
Not theirs to vaunt success by might and main,
Or drag the car of vict'ry o'er the slain,
For they were pledged to nobler, deadlier strife—
Death was their foe, their guerdon human life.

You know the record, how as years have gone,
The work has prospered. Stone on stone,
Laid in the cement of united will,
And carved and fashioned with the utmost skill.
Some are memorial tablets; some o'ergrown
With ivy, and on each of these a crown.
Their work is done. Aere perennius.
And now their sacred message comes to us:
"Build ye, and build ye while ye may.
Our work is yours, the burden yours to-day.
So shall we rest. In you we live again.
If you are faithless, we have lived in vain."

Oh, men! Oh, men! my brothers, ye are strong
In purpose and in hatred of the wrong;
Strong both to will the right and strong to do.
Do you not know the world has need of you?
More need of you than you of it? I hear
On every side the call, from far and near,
For better manhood, higher aim in life,
Something beyond the sordid, selfish strife
That warps the soul. The wall on which we build
Is higher now than when our sacred guild
Was young. Lift, then, unto its very top
Yourselves and all you have, nor stop
To barter for the rubbish at your feet.
Seek not for gold to make your work complete—
The world is cursed with gold the few
Have molded into fetters. It is you
Men ask for. What is your reply—
Your answer to the sad and heart-sent cry?
The world demands the best of all there is;
You are the product of the centuries.
The past has laid its treasure at your door,
The present calls you "lord." What more
Do you require? Think you, is not this much?
Not much but little, save you are in touch
With human needs and human wrongs and woe.
Your hands are empty hands unless you go—
As only you can go—upon the field,
Where life's fierce battle rages under shield,
And man to man, to aid the sore distrest—
To raise the fallen, sucor the opprest,
And all the while to work toward the light.
This is your mission and your vested right.

It is from labor such as this you bring
Material for the arch of which we sing.
With consecrated heart and brain and life,
Be "lifters" always, victors in the strife.
Be sure "'tis good for strength"—so runs the song,
"To know that some one needs you to be strong."

The banquet lights have burned almost too long.
The hours, with happy repartee and song,
Have past unchallenged. On the goblet's rim
The ice no longer tinkles, and the hymn
The night-wind sings is hush. The morning light
Will show to-morrow's duties soon. Good-night!

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That the latest operation for epilepsy, excision of the three cervical ganglia of the sympathetic, is not wholly inoccuous, was shown by a case recently operated upon by Dr. Emory Lanphear, at St. Mary's Infirmary, St. Louis. Removal of the ganglia from the right side of the neck was effected without difficulty, and was followed by total subsidence of the previously very severe and frequent paroxysms. On the eighth day removal of the ganglia from the left side of the neck was made, but during extirpation of the inferior ganglion the vertebral artery was torn at a point so close to its point of origin that ligation of the subclavian was necessary. Nothing serious resulted from this part of the procedure, but from the removal of the inferior ganglion (probably), a most serious disturbance of the heart's action arose: the pulse running above 150, with most profound collapse. Aftter a period of some three days, during which the patient was in a critical condition, the normal heart-beat was restored. At the present time the patient is in excellent condition, save for an inequality of the pupils and slight atrophy of the arm.

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Persistent pain over the seat of an old fracture is nearly always benefitted by the internal use of iodide of potassium, with the application of iodine or a mercurial ointment externally at the seat of the pain.—International Journal of Surgery.

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An abstract of a paper on "The Intravesicular Bulb in Operations on the Bladder," by Dr. F. Reder, of St. Louis, is given in Medico Surgical Bulletin, October 10, 1898. The reviewer says: "Dr. Reder presents an instrument having the appearance of a Nelaton catheter. It is of rubber, having a bulb at the end which can be distended to a diameter of five inches. It is introduced by means of a staff. The staff is then withdrawn, and a Danielson's syringe is used to inflate the bulb. (The syringe is used experimentally before the introduction of the bulb to gauge the amount of distension desired.) The bulb having been distended and a clamp having been applied externally, suprapubic cystotomy is done in the usual manner; fixation-ligatures are placed and the incision is made, taking care not to cut the bulb. Then the clamp is removed and the bulb collapses, permitting of inspection of the interior of the bladder. The bulb, which has not been removed, is then reinflated, allowing a proper approximation of the wound-margins, suturing, etc. The author has also used this bulb to distend contracted bladders.

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New York Medical Journal gives a synopsis of the report of a unique case of appendicitis, by Dr. John Young Brown, late Professor of Gynecology and Abdominal Surgery in the St. Louis College of Physicians and Surgeons. On examination the abdomen was found slightly tympanitic, and there was considerable tenderness over the seat of the appendix, but no mass could be made out. Rectal examination was exquisitely painful and there was considerable bogginess on the right side. The pulse was 80, and the temperature 98.8 degrees Fahrenheit. From the commencement of the attack until the patient went on the table, the pulse never rose above 82, nor the temperature above 99.8 degrees Fahrenheit. There was, however, persistent nausea, and the patient had all the appearance of being a very sick man. On opening the abdomen about a quart of stinking serum was found free in the pelvis. This was sponged out, and there was found presenting in the wound a loop of ileum tightly bound down by a bandlike adhesion. The presenting ileum was dark in color, and appeared at first likely to necessitate a resection. However, after the constriction was relieved, the circulation gradually returned. From the adhesions present about the cecum, it was conclusive that the patient had had frequent attacks of appendical trouble. The cecum was tightly bound down by adhesion, and it was with some difficulty that the appendix was found; it was densely adherent to the cecum, strictured and gangrenous at the tip, with a perforation about the size of a pea. The patient reacted nicely after the operation, the gauze was removed in thirty-six hours, and his recovery was uneventful. As Dr. Brown points out, the above case presents many interesting points, and forms an instructive commentary on the views of those physicians who consider that clinical conditions can show which cases should demand instant operation, and which may be safely left to "well-conducted medical treatment." This case reported by Dr. Brown would probably, under such a theory, have been relegated to the latter class with a fatal result, as would also one which he reports having seen in consultation, where symptoms almost identical with the foregoing were presented, and yet on opening the abdomen an intussusception was found which necessitated the resection of ten inches of gangrenous ileum. Here was a man with a temperature and pulse almost normal, with every clinical symptom pointing to a mild attack of appendicitis, and yet, on opening his abdomen, conditions were found which conclusively proved that had operative interference been delayed twenty-four hours, he would have been beyond the reach of surgery to save.

# American Journal of Surgery and Gynecology

. . . EDITED BY . . .

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The spelling found in this magazine is that voucht for by the most prominent educators of this country; and is recommended for general adoption.

ST. LOUIS, JULY, 1899.


## EDITORIAL.

It is indeed a good thing for the city of St. Louis that Dr. Max Starkloff has been reappointed Health Commissioner. During his coming term the new City Hospital will be built—in part at least—and under his supervision it may be taken for granted that it will be, when completed, a model institution. It is also a matter for congratulation that Dr. H. L. Nietert has been appointed superintendent of the City Hospital, and will probably open a few pavilions of the new and modern hospital. With these two men in control of hospital affairs, if the municipal authorities are not niggardly in appropriations, much improvement may be expected in measures for the care of the pauper sick of this great city.

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The appointment of Dr. E. C. Runge to succeed himself as superintendent of the St. Louis Insane Asylum has also met the hearty approval of all medical men of the city who know of his success in the management of that great hospital heretofore, excepting those few who have had " ambitions of their own," and those who cannot appreciate talent or good management unless it happens to be some intimate friend or henchman—and with the latter it is more apt to be influence than ability which attracts. Dr. Runge is winning national recognition as an asylum superintendent and physician, and will, no doubt, further distinguish himself during his present term of office. It is rumored that he has been (or soon will be), tendered the superintendency of the National Asylum at Washington.

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To St. Louis the most important medical meeting of the coming year will be that of the Tri-State Medical Society of Illinois, Iowa and Missouri, which will occur in early spring under the presidency of Dr. O. Beverly Campbell. Dr. John C. Murphy of St. Louis is the secretary and chairman of the Committee on Scientific Communications. Contributions are already promist by such men as Drs. Byron Robinson, Alex. Hugh Ferguson, Franklin H. Martin, Fernand Henrotin and John B. Murphy of Chicago, John Punton, A. H. Cordier, H. C. Crowell, J. N. Jackson and Geo. Halley of Kansas City. St. Louis men of note will, of course, be conspicuous on the program of this meeting, which will undoubtedly be more numerously attended than any previous one; and the attendance has always been good.

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About two years ago, when this journal exposed the grossly irregular and intensely unethical conduct of some of the most prominent medical men of the City of St. Louis, nearly all of whom were members of the St. Louis Medical Society, it suggested that the Medical Association of the State of Missouri pass a resolution to the effect that until such members were censured, expelled or otherwise punisht and restrained from further violation of the Code of Ethics, delegates from the St. Louis Medical Society should not be entitled to registration; for by their unethical conduct, these guilty ones were bringing disgrace upon not only the medical profession of the city, but upon its members throughout the State. Copies of this special number were markt and sent to every regular physician in the State; and letters were also mailed to all members of the State Medical Association living outside the city, asking their earnest co-operation in attempting to suppress the evil.

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As a result of this work for compulsory cessation of "genteel quackery" on the part of some of the most conspicuous members of the St. Louis Medical Society, there gathered at Kansas City last year between 200 and 300 men who were determined to pass the resolution and compel the local society to either purge itself of its guilty members or cease sending delegates to the State Society—which would, of course, also exclude delegates of the condemned society from the American Medical Association. But at the urgent request of the editor of this journal—for various reasons, chief of which was opportunity to gather convincing proof of the guilt of some of the worst offenders—action was deferred until this year.

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At the meeting at Sedalia this year the resolution, but slightly modified, was adoptetd by an overwhelming vote (198 for, 2 against, according to press reports). As a consequence of this action on the part of the State Association, delegates from the St. Louis Medical Society will be denied the privilege of acting as members of the State and American Medical Associations, unless it can satisfy the State Society that it has expelled or silenced all the guilty members.

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This will leave the St. Louis Academy of Medical and Surgical Sciences as the only medical body in this city entitled to send delegates to the Missouri State and American Medical Associations. The members of this society are:

James Moores Ball,
Emory Lanphear.
A. H. Ohmann-Dumesnil,
William Porter,
Otto Sutter,
G. C. Eggers,
J. C. Murphy,
John F. Roach,
J. William Williamson,
L. P. Walbridge,
M. Dwight Jennings,
H. G. Nicks,
R. F. Amyx,
J. C. Spohn,
Geo. F. Hulbert.
G. M. Phillips,
J. L. Wiggins,
J. O. De Courcey,
Carl Pesold,
Phil Scholtz,
M. F. Engman,
G. Howard Thompson,
Arthur E. Mink,
H. G. Gould,
H. S. P. Lare,
R. E. Wilson.

Many prominent names, it is true, are conspicuous by their absence, but the careful observer of things medical will do well to keep his eye on these men—they may revolutionize medical matters in this great city. Already they have, by concerted action and persistent work, accomplisht much. They will be found

to constitute a nucleus around which great events are to form in the not distant future.

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For, it will be noted, this list includes practically all of the most enthusiastic, truly scientific workers of the medical profession of the city; young men; students; men intent on doing good, honest work for the advancement of medical science; men against whom—with one or two exceptions—nothing can be said on the score of unethical conduct, or of anything pertaining to irregularity. This is the society which has promptly expelled Paquin and others as soon as guilty conduct was shown; it has not been necessary for the State Medical Society to point out the course it ought to pursue, and threaten to reject its delegates, unless it rid itself of quackish members! Seeing the irregularities, it has first advised discontinuance; its warning being disregarded, it has not hesitated for a moment longer than that necessary to print the ballots for expulsion.

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As a result of these acts for good, a great interest has of late been manifested in the work and welfare of the Academy; so when the sessions are resumed in early autumn, it is probable the membership will quickly run up to the limit—50. The presentation of an acceptable thesis is one of the requisites for membership. Several applicants have recently been rejected on account of the inferior character of the admission thesis. If now, in addition to its scientific and ethical work, it becomes the only society in this city entitled to representation in the State and National bodies, the rush for membership will be all the greater.

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Of course it is possible the St. Louis Medial Society may expel the worst offenders and suspend or censure the less flagrant violators of professional decency. But it has made a bad beginning. Charges of unprofessional conduct were preferred against Dr. W. H. Mayfield, proprietor of the great Mayfield Sanitarium, and were referred to a committee of three surgeons—to all of whom may (perhaps unjustly) be imputed prejudice against their surgical rival, because of his undoubted success in obtaining business; all of whom were members of staffs of the Missouri Baptist Sanitarium, the Mullanphy Hospital and St. Mary's Infirmary: the three largest hospitals of the city, besides Mayfield's. It cannot be denied that the friends of Dr. Jos. Grindon, president of the St. Louis Medical Society, were greatly disappointed that he had not the moral courage to resist the influence brought to bear for the appointment of a committee so unquestionably antagonistic to Dr. Mayfield. While some of these members had the good sense to see the awkward position in which they had been placed by those who wisht to expel Mayfield, and at the same time protect themselves and the hospitals with which they were connected, and therefore declined to serve upon such a committee, their appointment by President Grindon plainly showed the intent to shield some of the worst offenders in the society. The results of this injudicious act will be unfavorable to the society ultimately.

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Upon the report of the committee to which was eventually referred the charges against Dr. W. H. Mayfield, the St. Louis Medical Society very promptly expelled the doctor, and at once adjourned for the summer. When one recalls the fact that Dr. Mayfield has not been, by any means, the worst advertiser in the St. Louis Medical Society, (tho his methods have been more open; his ways of securing business, plain and unconcealed), when one thinks of the disreputable ways of some of the men who are loudest in their condemnation of him, there cannot but come the suspicion that he has been simply used as a butt by the Society, the no less guilty members of which hope to retain their membership in the State body by expelling him. If such is the case, it will not win.

The sentiment among the reputable doctors of the State of Missouri is so strongly in favor of compulsory reform in the St. Louis Society that unless something more radical is done, delegates will be "turned down" so promptly next year at Moberly that the local society will never recover from the shock. It must therefore be—do or die. There can be no half-way measures; no stopping in the good work. Those who are still connected with the disgraceful 50-cent hospital schemes must be dropt from membership; those who are conspicuously using the daily press to advertise themselves and their specialties (this applies particularly to the neurologists and the surgeons) must be muzzled; those who are practising secret methods, using and indorsing patent medicines for the cure of inebriety and other diseases, must be exposed and dealt with; more than all, those whose wholesale abortions have made their names abhorrent to all who have learned of their practises, must be punisht; those who use religion for a cloak to hide professional iniquities, hospital abuses, etc., must be exposed and given their just deserts. To the correction of these and other evils, this journal has long been pledged, has zealously labored—not altogether in vain—in the past; and will continue to expose and condemn the guilty ones until at last the name "St. Louis doctor" is no longer connected with a suspicion of irregularity, or worse.

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The Cincinnati Lancet Clinic says: "The American Journal of Surgery and Gynecology some time ago gave an expose of the vicious hospital and drummer method of practice in St. Louis that is simply startling. It has been generally understood that the practice of medicine in St. Louis was in a more or less demoralized condition, but among those not present on the scene it would be hard to realize the actual conditions as depicted by Dr. Lanphear. The etiology of the conditions seems to the writer to be traced to an epidemic of medical college creations that broke out a few years ago. Ten or more men would band together, obtain a charter and elect themselves professors; but a college and professors must have hospital and dispensary facilities, so these adjuncts became parts of the institution, members of the faculty holding staff positions. So far the business was ornamental and did no particular injury to any one, but with hands on the plow-handles there could be no stopping at this innocuous point. Patients must be had for illustrative purposes, and students to fill the benches. To obtain the former a systematic organization with solicitors was set in motion, and inducements of the most seductive order were handled with all the adeptness of a lottery agent. They gathered in the sick, lame, halt and blind, and the business was in motion. The movement was vermicular and wormed itself into the business of most of the men who were going along in the well-beaten paths of recognized methods. The land was scraped as with a fine-tooth comb for students, and the new colleges gathered them in until in a very brief period there were more students on the benches than had ever entered the old institutions. Graduates were turned out by the score, and by the hundred. These young fledglings were taught in the ways of their teachers, and it would seem that whole flocks of them located right in St. Louis. Such conditions created frictions, and the frictions heat, fire and volcanic eruption as pictured by Dr. Lanphear. The lesson is an object one which should be heeded, and points clearly to the overdoing of ill-advised and pernicious plans for attaining fame in medicine. There should be fewer medical colleges, a less number of students, and better ones so as to keep the number of practitioners in a reasonable ratio with the population. St. Louis is a grand city, full of enterprise and rapidly growing. In the past its medical profession has been one of its crowning glories, some members of which were giants and shed a lustre and rays of brightness which time can neither dim nor extinguish, and to-day those men have legitimate successors who are diligently carrying on the work

that was begun some scores of years ago. The pyemic conditions created by an ingestion of some nauseant material has produced the existing outbreak of furuncles, which is destined to slough and heal by old-fashioned granulation methods. Cicatrization will ensue and all will again be placid, bright and smooth, but moving steadily onward with a force that is none the less strong because invisible. In summary: St. Louis has had too many medical colleges, and too many medical students, hence too many physicians, too many hospitals and too many dispensaries, all having chromo attachments. The roar of rumbling thunder will soon cease. Lightnings will come and possibly strike where least expected, and then the atmosphere will be again pure, and medical professional life will not only be tolerable, but a source of comfort, peace and placidity.'"

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It is a pleasure to inform Brother Culbertson that the "peace and placidity" era seems about to arrive. The St. Louis Medical Society has been censured by the great State Medical Association; and will be made to purge itself of its quacks. All of the hospitals (with possibly one exception), have withdrawn their drummers; all of the 50-cent hospitals, save two, have closed, and these are on the decline; many of the men who have sought notoriety through the columns of the daily press have been shamed into an innocuous silence, so that our newspapers do not, with disgusting regularity, go into details of operations by more or less distinguisht "professors;" and a hopeful spirit now pervades the entire medical profession of the city. True it is that the struggle for existence is still a hard one on account of the excessive number of doctors and the yet too frequent free clinic.

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While it is true that "newspaper advertising" is less conspicuous than formerly, it ocasionally breaks out in a disgusting way. Thus, the Western Medical and Surgical Gazette, of Denver, is led to comment on newspaper medicine as illustrated by the St. Louis dailies: The St. Louis Post-Dispatch has a "Doctor's Column" in its Sunday issues. In the number for April 3 it has an entire page called the "Doctor's Page," and we notice the following representatives of the local medical profession: A. C. Bernays, Professor of Anatomy and Clinical Surgery in the Marion Sims College of Medicine (two columns and two cuts of cases); Otto Sutter, Superintendent of the City Hospital; B. L. Dorsey; Frank Rumbold, editor of the Laryngoscope ("A Doctor's Replies to Correspondents"); Amand Ravold, Professor of Bacteriology in the St. Louis Medical College (two-thirds of a column); J. G. Parrish; Robert Atkinson, Professor of Theory and Practice of Medicine in the Marion Sims College of Medicine; Frank Boogher, Professor of Surgical Pathology in the Barnes Medical College; I. N. Love, editor of the Medical Mirror; Frank J. Lutz, Professor of Surgical Pathology and Clinical Surgery in the Beaumont Hospital Medical College, ex-President of the St. Louis Medical Society and of the State Board of Health (two-thirds of a column); A. V. L. Brokaw, Professor of Anatomy and Clinical Gynecology in the Missouri Medical College; Keating Bauduy, assistant to the Professor of Nervous and Mental Diseases in the Missouri Medical College; Tilly A. Martin; Felix Garcia. O tempora, O mores. This list is certainly a representative one. It is also an elegant "mixtum compositum" of ability, mediocrity and stupidity. Some of those named have been known for years as being on the shady side of respectability. Some of them are of the malodorous professional reputation into which they are brought by such indulgences and cannot excuse their peccadillos on the ground of inexperience or ignorance of what is decent. Others are of such deficient mental caliber that they feel they are to be congratulated on the company they thus get into and the publicity, such as it is, which they thus acquire. Some may be innocently quoted. Others openly boast of their advertising abilities, and pride themselves on their skill in obtaining a great deal of publicity without being called before the professional bar. It is a misfortune to the profession at large that medical teachers and editors should indulge in such practices with impunity. What an example do they set to the coming generations! On them rests the responsibility of the production of a considerable portion of our charlatans and frauds. Fortunately for the reputation of St. Louis, this list cannot be considered as truly representing its entire medical profession. A large proportion of the physicians of that city would justly resent this aspersion.

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"The editorial lash which Brother Lanphear has beeen mercilessly applying to the backs of the erstwhile unco gude of Saint Louis, is having a good effect. If you don't see what you want in regular medicine, get out and stay out."—Medical and Surgical Monitor, Indianapolis. That is the correct plan of action: If regular medicine does not afford sufficient opportunities for advancement leave the ranks and become newspaper advertisers; and pay for the advertising you get! It is a pleasure to assure the Monitor and other interested Journals that the fight against newspaper advertising on the part of members of reputable medical societies of St. Louis has given great hope of an almost total abolition of that disagreeable practice.

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It is announced that the great St. Louis University will soon selet a medical faculty and make suitable arrangements for the maintenance of a great medical school which in its equipment, requirements, etc., will be the equal of Harvard, University of Pennsylvania and Johns-Hopkins. There are certainly the very best of reasons why a high-grade, first-class medical school in the Mississippi Valley should prove a markt success from the very outset. If the St. Louis University is in position to open and conduct such an institution, within ten years it will be the most prominent medical school in the Great West; and the men connected with it in the capacity of teachers will be the leaders of medical thought and progress in the Mississippi Valley. But in the selection of its faculty, the managers of this great institution of learning must not be guided by the narrow rules which have hitherto prevailed in the choice of men to teach; there must be no savor of sectarian prejudice, there must be no yielding to personal animosities; there must be no narrow favoritism; there must be no attempt to form a new "college clique." In this city at the present time there are men of international reputation, quite a large number of them, who are now without college connection, or so loosely attacht to the institutions in which they teach that they would readily resign to accept chairs in a high-grade medical schoool. If these men are secured for the new school, regardless of religion, politics or personal prejudices—if they are taken into the faculty merely upon their scientific attainments—a teaching body can be selected for the medical school of the St. Louis University which will attract attention throughout the medical world. If these men are ignored, if a few medical politicians are allowed to dictate the policy and select the faculty of the new college abject failure is to be predicted from the very start. It is to be hoped that if the new enterprise is inaugurated it may be organized upon a basis entirely different from that which has been the bane of St. Louis medical schools of the past. Bury creed, wealth, personal prejudice and petty jealousies; adopt only scientific attainments and personal integrity as the measure of choice.

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It seems that in spite of the disfavor into which 50-cent hospitals have fallen, and in the face of the out-spoken condemnation of the plan by Dr. Edw. Younkin, surgeon to the hospital, the "Metropolitan Hospital," Eclectic, under the control of Dr. M. M. Hamlin (a D. D. as well as M. D., by the way), one of the teachers in the American Medical College, has adopted a modi-

fication of the assessment plan of operation. The following circular is being thrown about the streets of St. Louis:

THE METROPOLITAN HOSPITAL

Has secured possession of the elegant Shaw mansion, located at 2900 West Chestnut street, and is is especially adapted for hospital purposes, having eighteen large rooms, wide hallways, and, in short, an ideal place.

"We recognize the need of an institution that will place the best medical talent at the disposal of people of limited means, and we propose to furnish such an one.

"We have made arrangements with several specialists, including a leading surgeon, an oculist, an aurist, etc., who will respond to our call at a moment's notice. And when any of our members get sick or meet with an accident, instead of placing him or her in a crowded ward, that is enough to make a well person sick, we will give him or her a first-class private room, and, in short, do unto others, as we would be done by.

OUR CONTRACT.

"This hospital contracts to give you the advice of prominent physicians and surgeons——and specialists, when needed—all the medicine you need, and when you get sick or meet with an accident we will send for you and admit you to our hospital, where you will be humanely and tenderly cared for; or, if you prefer it, our physicians will call and treat you at your own home.

"The patient will be surrounded by all the modern facilities for use in case of sickness or accident; a complete register is kept of his temperature, respiration, action of medicine, and of what he eats and its effects; besides, the physicians are always there and know when the critical period comes and passes and take advantage of it.

DUES, ETC.

"You are offered all of these advantages for the small sum of fifty (50) cents per month (in advance), with a guarantee that there will be no extra charges for anything you may require.

CONDITIONS OF MEMBERSHIP.

"Applicants must be white, males or females, of good moral character, and in sound health when application is made.

'We cannot treat chronic or incurable diseases contracted before becoming members for fifty (50) cents per month, but will give a special rate on application.

HOME TREATMENT—MINORS.

"We will hereafter treat families at their homes. A man, wife and three children we will treat at their homes for one ($1) dollar per month, the sixth and seventh member of family, if there be so many, will pay an additional twenty-five (25) cents each. All over seven in a family of minors will be treated free of charge.

ADULTS.

"A family of adults will be required to pay as follows: Both parents (or two members of family of adults) and only one son or daughter will be treated for one ($1) dollar per month, the fourth and fifth member of the family, if they be adults, will be required to pay fifty (50) cents each. All over five in family of adults will be treated free, making the limit on a family of adults two ($2) dollars per month. We hold ourselves in readiness to call at the homes of our members, night or day, and render every assistance that comes within the province of a physician or surgeon, and continue to treat patient until he or she is well.

"Patients will be furnisht with medicine if they come to the hospital for consultation, but where physician calls at your home you are required to buy your own medicine. Our physicians will, however, carry a supply with them for emergency cases, for instant relief, etc.

"We cannot treat old, chronic or incurable ailments at above rate, but will give special rate if you call at the office."

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In the election of Dr. W. W. Keen of Philadelphia as president the American Medical Association has done honor to one of the world's greatest surgeons. The meeting at Atlantic City next year, tho too far away from the center of population, under his direction, will undoubtedly be one of the best ever held; and the presidential address will, no doubt, be of great interest to surgeons throughout the world. This great society ought never to meet elsewhere than in Chicago, St. Louis, Cincinnati or Detroit; other places are too remote from the great mass of the best of America's doctors or too poorly supplied with hotels.

## SURGICAL NOTES.

Dr. A. H. Meisenbach, formerly professor of surgery in the Marion-Sims College of Medicine, St. Louis, says: "A patient who has suffered frequent pains, spasmodic in character, so-called stomach cramps, very likely is the subject of gall-stones, and should be subjected to a rigid examination and possibly have an exploration made.

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The death rate in appendicitis treated medically has been determined to be rather more than twenty-five per cent—not in first attacks, but eventually. The death rate in appendicitis treated surgically has been reduced to a fraction of one per cent at the hands of several surgeons, in cases in which abscess outside of the appendix has not yet formed.—R. T. Morris.

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Discussing the function of the omentum and its uses in abdominal surgery, Dr. A. R. Kiefer, Professor of Anatomy and Clinical Surgery in Barnes Medical College, St. Louis, recently said: In brief, its anatomic relation teaches us that this organ is adapted to the absorption of whatever can be handled by the lymphatics. Observation teaches us that the function of the omentum spread out over the contents of the abdominal cavity not only apro-like, protects against changes of temperature, mechanic injuries, etc., but that it is constantly on guard ready to remove from the peritoneal cavity all obnoxious substance capable of being handled by the lymphatics, and to form adhesions to prevent the extravasation of inflammatory products. In the performance of these functions it exhibits a splendid anatomic arrangement, and an alertness challenging admiration. There is no point in the abdominal or pelvic cavity to which it will not migrate whenever its absorptive function is demanded. In cases of inflammation in the region of the gall-bladder, I have found the whole omentum up over the transverse arch of the colon clinging to the inflamed parts. When the site of the inflammation was in the region of the spleen, I have found it there. When one tube was involved it was clinging there in a desperate endeavor to prevent a general infection, and when both tubes are setting up a local peritonitis, we find it impartially administering to the necessities on both sides of the pelvis. It is first the patient's, then the surgeon's greatest friend. No portion of it should be uselessly sacrificed by the surgeon. It requires no great stretch of the imagination to see with the mind's eye an omentum successfully limiting a pelvic inflammation which would doom the patient to an untimely grave, were the omentum anatomically too short to reach the seat of the trouble.

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The St. Louis Medical Gazette contains the report of a remarkably large goitre removed from a woman 63 years of age, by Dr. Augustus C. Bernays, Professor of Anatomy and Clinical Surgery in the Marion Sims College of Medicine, St. Louis. It was of enormous size—it having been allowed to continue growing throu the timidity and over-cautiousness of numerous physicians who had examined it, all of whom advised against an operation on the ground of the great danger involved by its removal in a patient of advanced age. The long and slow growth of the tumor had resulted in the development of a well defined capsule. This capsule was incised and by a quick movement of the hand the tumor was shelled out and only four artery forceps were required to grasp the four thyroid arteries. The right inferior thyroid was the largest, corresponding to the largest development of the tumor. Its calibre was equal to that of a normal brachial artery of a strong man. The four arteries were tied by means of silk ligatures which were cut short. The bottom of the wound was formed by the larynx and trachea in the middle and the sheaths of the large vessels on both sides. The sterno-cleido mastoid muscles of both sides were spread out and flattened so as to resemble the quadratus lumborum muscles in size and shape. There was absolutely no hemorrhage worth mentioning, and no other ligatures were applied besides the four mentioned. The wound was closed by means of a continuous suture, and only a small strip of iodoform gauze was left, the end protruding out of the most dependent part of the wound between two stitches. It was not thought necessary to cut off any of the redundant skin which had covered the enormous tumor. The tumor was a mutilocular cystoma containing a colloid substance in its alveoli. The whole thyroid gland was removed. The patient made an uninterrupted afebrile recovery, the wound healing by first intention. The strip of gauze was removed on the third day.

Dr. P. Hoffman, of St. Louis (Medical Review), offers a simple and efficient method of dealing with long-standing, non-purulent collections of fluid in the pre-patellar and other bursae. The operation consists of withdrawing the fluid from the distended bursa, scarifying the interior of its walls and applying pressure to bring them in contact, so as to allow of their union and obliteration of the cavity. In applying pressure, the bandages should be removed as often as they become loose. The author claims the following advantages from this operation: It takes but little time; requires no anesthetic; sutures are not needed; being subcutaneous, there is but little risk of infection; the patient can walk about with but little inconvenience and attend to any duties immediately after the operation. The author states that in two cases failures have occurred, and therefore declares that the scarification should be thoro, evacuation of the fluid complete, and compression quite firm to gain success in all cases.

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At the annual meeting of the American Laryngological Association, held in Brooklyn, N. Y., Dr. W. K. Simpson of New York demonstrated the use of the comprest sponge devised by Dr. A. C. Bernays of St. Louis, which he maintained would swell to fifteen times its size and absorb twelve times its weight of liquids. Its efficacy in general surgery he claimed to be due to the absorbing power, acting as a cleansing agent and then serving to pack the wound. This sponge consists of cotton fibre subjected to many hundred pounds of pressure and comprest to a disc one-sixtieth of an inch in thickness. It is especially adapted for use in the nares, is an excellent splint for the later stages of Asch's operation for deflected septum and can be used as a means of conveying medication to various parts of the nose.

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Dr. A. H. Meisenbach, of St. Louis, Medical Review, March 12, concludes concerning hernia: (1) In view of the success of the radical-cure operations, an existing hernia is a possible menace to life, and more so than a radical operation. (2) This fact ought to be imprest on the laity by the family physician. (3) Taxis is a dangerous proceeding, as usually carried out. (4) In all hernia operations a radical cure technic should be carried out. (5) Preference should be given an animal suture over silk as a buried suture. (6) In all cases of strangulation where the bowel cannot be easily reduced after the sac is opened, the abdomen should be opened in the median line, for facilitating reduction, establishing drainage, or for anchoring a doubtful, gangrenous, or resected bowel.

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## GYNECOLOGICAL NOTES.

It should ever be borne in mind that metrorrhagia about the menopause is always the result of disease of the uterus or its appendages; that "flooding at the change of life" is never physiologic, and that the popular belief in this fallacy is responsible for the loss of many lives which might have been saved by early diagnosis and the proper treatment. A disease which may have been benign at first readily becomes malignant at this period of life, if the system has been enfeebled by repeated hemorrhages.

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Dr. Walter B. Dorsett, Professor of Obstetrics in Beaumont Hospital College says: Altho I once was enthused with the belief that it was a feasible undertaking to treat successfully uterine fibroids by the ligation of the uterine arteries per vaginum, I now know in the light of subsequent experience, it is not worth the trial, and I consider the ligation of the broad ligament, en masse, which means a thoro obliteration of arteries, veins, nerves, etc., contained in the broad ligament, as practist by Martin as unworthy of a place in medical literature.

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Dr. R. M. Funkhouser, formerly Professor of Gynecology in St. Louis College of Physicians and Surgeons, says: "I cannot see that anything is gained by leaving the uterus when the appendages are removed, and if I must decide between abdominal hysterectomy and vaginal hysterectomy, all things being equal, I should choose the latter."

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Riedinger reports (Philadelphia Medical Journal, October 15, 1898), two cases of fibromyoma of the large intestine. In addition he refers to the cases reported by Lode Pfannenstiel, Westermark, Senn, and Berg. Of his own cases, one occurred in a woman aged 38 years, who had given birth to six children, the last 2½ years before. For three weeks she had experienced severe pain in the abdomen resembling labor-pains. On examination the abdominal wall was found greatly distended by three tumors. One of these was as large as a fetal head, elastic and hard. Beneath this was a broader tumor, and another of resisting contour. The third tumor was discovered after the distended bladder had been catheterized. A diagnosis was made of penetrating rupture of the uterus and a bony tumor of the pelvis. The woman was, in addition, well advanced in pregnancy. Celiotomy revealed the abdominal cavity distended with fetid gas, and under the abdominal wall lay the buttock of a fetus weighing 3,500 grams. The tumors were found attacht to the large intestine. The second patient, 24 years old, and married had menstruated regularly since her eighteenth year, and had given birth to three children, the last ten weeks before. In the eighth month of the last pregnancy, a hard swelling was discovered under the diaphragm. Examination made after this labor revealed a tumor twice the size of a man's head, hard and smooth, and mainly in the left half of the abdomen. A diagnosis was made of a solid tumor of the kidney, but celiotomy revealed a fibroid tumor attacht to the mesocolon of the splenic flexture and the descending colon.

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The Medical Sentinel says: "When about to examine a septic case or one where syphilis is suspected, wash the hands in vinegar or dilute acetic acid, and the smarting will quickly disclose any little scratches or abrasions in the skin which might become starting points of infection, to which collodion may be applied."

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Dr. Mary A. Spink (Woman's Medical Journal, September, 1898), records two cases of exophthalmic goitre in which gradual dilatation of a stenosed os uteri by the negative pole of a galvanic battery caused the simultaneous subsidence of both diseases.

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## NEWS NOTES.

The annual meeting of the Medical Society of the Missouri Valley will be held at Council Bluffs, Ia., Thursday, September 21, 1899. Titles of papers must be sent before August 20 to Dr. V. L. Treynor, secretary, Council Bluffs, Ia. It is expected that this will be an extraordinarily good meeting.

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The Woman's Hospital at Sixteenth and Pine has been closed, as Dr. Geo. Hulbert did not care to longer act as superintendent, and no competent successor could be found. It has had a long and quite sucessful life, but its unfavorable location in the midst of the demi-monde and on noisy streets has made it a losing venture financially, ever since its start. Some of the greatest men of the city have, from time to time, served upon its staff.

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Dr. Oscar F. Baerens has been elected to the professorship of diseases of the nose, throat and ear in the St. Louis College of Physicians and Surgeons.

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The Mississippi Valley Medical Association will hold its twenty-fifth annual meeting under the presidency of Dr. Duncan Eve, of Nashville, on October 3, 4, 5 and 6, in the city of Chicago. The Committee of Arrangements confidently anticipates that this meeting will be a prominent feature in the history of the Association, and advances the following reasons for this opinion: (1) The Autumn Fete, to be known as the American Festival, will be held from September 25 to October 9, at which time the president and his cabinet will be the guests of the city during the laying of the corner-stone of the new federal building. (2) The railroad fare from all points to Chicago will be at one-fare rate for the round trip. (3) The post-graduate schools of the city propose to arrange for a series of clinics to be given during the festival period by the most eminent teachers in all the medical faculties of this great center, thus affording an extraordinary attraction. (4) Aside from the features mentioned above, there has been for several years past a desire on the part of the members to hold a meeting in Chicago. The accessibility of this city, and its splendid hotel facilities, make it an ideal convention place, and consequently the committee expect more than double the usual attendance at this meeting. Titles of papers should be sent in at once to the secretary, Dr. Henry E. Tuley, Louisville, Ky. The exhibit hall will be located on the seventeenth floor of the Masonic Temple. Applications for space should be sent to Dr. J. Homer Coulter, 1010 Memorial Building, Chicago.

### FOR NASAL CATARRH.

The aseptic and flastringent action of Micajah's Medicated Uterine Wafers in the treatment of nasal catarrh is must gratifying. A solution in the proportion of one wafer to four ounces of water forms an excellent antiseptic and astringent fluid, while in affections of the throat, as tonsilitis, stronger solutions, as one, two or three wafers to the ounce are equally useful. On request, Micajah & Co., Warren, Pa., will send sample and literature.

### A GREAT OFFER.

Any physician who will remit us $2 will receive for one year the American Journal of Surgery and Gynecology and the American Medical Quarterly, the regular price of which is $2. If any physician does not find each issue of the latter publication worth more than the cost of the yearly subscription, the publishers offer to refund the money. They claim that no medical periodical in this country or Europe compares with it in the character and value of the matter it contains.

### SOLAR HEAT.

Direct exposure to the sun's rays; employment in or living in hot and poorly ventilated offices, workshops or rooms, are among the most prolific causes of headache in summer time, as well as of heat exhaustion and sunstroke. For these headaches and for the nausea which often accompanies them, antikamnia will be found to afford prompt relief and can be safely given. Insomnia from solar heat is readily overcome by one or two five-grain antikamnia tablets at supper time, and again before retiring. If these conditions are partly dependent upon a disordered stomach, two five-grain antikamnia tablets, with 15 or 20 drops of aromatic spirits of ammonia, well diluted, are advisable. For the pain following sun or heatstroke, antikamnia in doses of one or two tables every two or three hours will produce the ease and rest necessary to complete recovery. As a preventive of and cure for nausea while traveling by railroad or steamboat, and for genuine mal de mer or sea sickness, antikamnia is unsurpassed, and is recommended by the White Star, Cunard and American Steamship Lines.

### AMERICAN PROCTOLOGICAL ASSOCIATION.

A new medical society, to be known as the American Proctological Association, was organized by prominent rectal specialists at Columbus, O., during the recent meeting of the American Medical Association. Its object is to give special study to diseases of the rectum and colon. The following officers were elected: President, J. M. Mathews, Louisville; vice-president, J. P. Tuttle, New York City; secretary-treasurer, W. M. Beach, Pittsburg, Pa.; board of counsellors, S. T. Earl of Baltimore, A. B. Cook of Nashville, and J. R. Pennington of Chicago. The charter members are Drs. J. M. Mathews of Louisville, J. P. Tuttle of New York City, J. B. Bacon of Chicago, S. T. Earl of Baltimore, L. Straus of St. Louis, L. H. Adler, Jr., of Philadelphia, B. M. Ricketts of Cincinnati, C. C. Allison of Omaha, T. C. Martin of Cleveland, A. B. Cook of Nashville, S. G. Gant of Kansas City, W. M. Beach of Pittsburg, G. B. Evans of Dayton, O., and J. R. Pennington of Chicago. The first annual meeting will be held in Washington, D. C., May, 1900.

### A PROMINENT FOOD.

Lacto-somatose is now generally considered as a prominent food and restorative in the treatment of gastro-intestinal diseases attended with marked exhaustion due to the drain of fluids from the system and the marked impairment of the digestive functions. Hence, a few remarks as to the manner of conveniently preparing solutions might not be out of place. The simplest way of dissolving the preparation is to place the desired dose upon the surface of about one-quarter glassful of hot water, and allow it to dissolve without stirring. This will require about 10 to 15 minutes, when a clear solution of agreeable taste and appearance is obtained, which may be drank in its own form or mixed with ordinary fluids, such as milk, soups, gruels, etc. Another simple means of dissolving lacto-somatose is to sprinkle it up on hot milk or broths, with a dry wire sieve. A still other method is to stir it into a smooth paste, with a little water before adding the remainder of the solvent, but this may be conveniently replaced by the above methods. The chief points to which attention has been particularly directed with reference to the therapeutics of lacto-somatose comprise its large percentage of assimilable albumins, rendering it a prompt and efficient tonic and food, its beneficial action upon the digestive tract, stimulating the appetite and relieving vomiting, and its freedom from taste and odor enabling it to be added to a variety of beverages, so that it never excites repugnance even when administered for long periods.

### SUMMER COMPLAINTS OF INFANTS, CHILDREN AND ADULTS.

The following prescription has been used for some time by a prominent Philadelphia physician, who states that he considers it almost a specific in summer complaints.

Liquor Bismuth, Glyco-Thymoline (Kress), of each two ounces, mix. Dose: a teaspoonful as often as may be required.

Glyco,Thymoline (Kress) may be combined with bismuth, tr. Opii, Camph. tr. Opii, Mistura Creta, syr, Rhei. Arom., etc.

Administered internally Glyco-Thymoline (Kress) acts as a carminative, intiseptic. alterative, stimulant, antacid and meets many of the requirements of the physician during the summer months.

Glyco-Thymoline (Kress), diluted one ounce to the quart of water, used as a sponge bath, stimulates the skin secretions.

An enema of Glyco-Thymoline (Kress), one ounce to the pint, will be found most valuable.

### "CHOLERA INFANTUM."

David Coleman, M. D,. Tottenville, S. I., reports the following case:

"On July 1 last, was called to attend a baby suffering from Cholera Infantum in advanced stage. I had little hope of saving the child; at once put it on teaspoonful doses of Glyco-Thymoline (Kress). It stopped the vomiting and corrected the bowels—a rapid recovery resulted."

September 17, 1898.

### FAMILIAR CLINICAL PICTURE.

One of the most common class of cases is that in which there are no well defined characteristic symptoms of organic disease, but in which there are disturbances of practically all the functions of the body. This condition is variously termed general debility, malnutrition, general atony, etc. The symptom-group is an exceedingly complex and varied one, but the most striking disturbances are those connected with the processes of metabolism; the patient is unable to replace by food the active waste occasioned by the physiologic functions. In consequence of this, nutrition suffers, vital force becomes diminished and there is functional disturbance of practically all the organs of the body. The stomach and the processes of digestion become particularly enfeebled, and as a consequence there arise the symptoms of atonic dyspepsia, with lack of appetite and inability of the digestive organs to prepare the food for assimilation. The patient's vital powers are at a low ebb and nature's method of recuperation, that is, by assimilation of food, is effectually inhibited by inability of the organs to furnish the required properly prepared nouishment. Every physician has many times realized the absolute uselessness in these cases of the ordinary employed tonics, iron, arsenic and strychnine. It is soon apparent that the remedies are either not absorbed, or if they do enter the system, they fail absolutely to re-establish the proper ratio of metabolic waste and repair. It is now universally conceded by authorities that the first requisite in the treatment of this class of cases is to foster the patient's nutrituve functions so that food will become assimilated and thus restore wasted tissue and impaired vital forces. The stomach is the organ of prime importance, and its normal funcremedies which have a direct tonic alterational activity must be re-established by tive and stimulant influence upon its enfeebled, inactive mucous membrane. Stomachics—gentian, taraxacum, phosphoric acid, etc.—are the agents of most service. When, however, these stomachics are combined in a certain manner with a remedy which, according to the highest medical authorities, is the best promoter of assimilation, the indications for treatment are completely met. Gray's Glycerine Tonic Comp. combats malnutrition upon the most rational scientific basis, that is, it re-establishes normal nutritive processes by its stimulant and alterative influence upon the digestive organs and also furnishes the wherewithal—glycerine—to cause the assimilation of food and medicines. It gives nature the needed chance to resume its normal work of reparing exhausted vitality and wasted tissue. While primarily a stomachic, Gray's Glycerine Tonic Comp. is of greatest value in all conditions of systemic depression or exhaustion occurring either independently or as a consequence of severe organic diseases, such as tuberculosis, Bright's disease, etc. It antagonizes depression by propping the natural functions of the body by engendering appetite and ensuring the absorption and assimiliation of food—nature's method of repairing waste.

THE PURDUE FREDERICK CO.,
15 Murray street, New York.

## "THE PASSING OF PLASTER-PARIS."

**SPLINTS** THAT ARE UP-TO-DATE.

**DePUY'S Adjustable Fiber Splints.**

No more Malpractice Suits.
No more Plaster-Paris.
No more Whittling.

No more "Kicking" about not being able to afford a Set of Splints.
The laity prefer a physician who uses a properly moulded splint. The lightest and strongest splint made. Can be made to fit by heating them over a stove, or any other means at hand, hot water, etc.
Sold in Sets, covering Infant, Children, and adult sizes, at two-thirds less than any other first-class splint made. Will last you a life time. Set No. 1, complete, 48 pieces; Set No. 3, 41 pieces. Special orders for jackets, etc., given prompt attention.
Send for pamphlet of information, and be convinced of the superiority of the goods.

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TRADE AXO MARK

The only Battery which Generates the Proper Current for Medical Treatment.

**CLEAN! DURABLE!**
**HIGHLY EFFICIENT**

Whatever make of instruments you use, insist upon the Axo Cells being furnished with them.

The current given off by this cell is of remarkable value in electro-medica treatment. As a therapeutic agent, it possesses an efficiency altogether unique and peculiar to itself, and which is not attainable from any other known electrical source. As a stationary Battery for office practice it has no equal in the world. Always ready for work without trouble or preparation.

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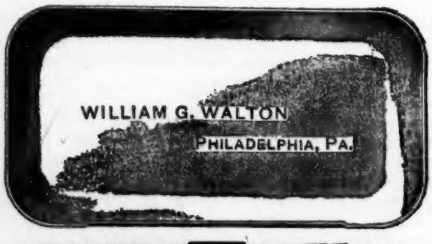


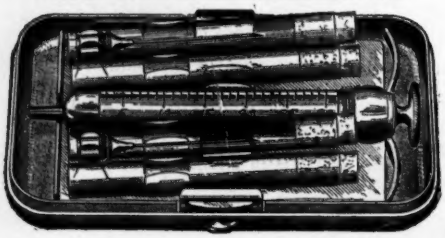

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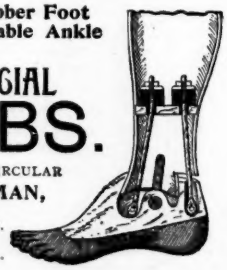

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